ROICC Contractor Crane QA/QC Procedures Manual

INDEX

a) ROICC Activity Hazard Analysis (AHA) – To be completed by Contractor and submitted to ROICC with acceptance prior to beginning work.
b) Crane QA SPOTCHECK – Competed by ROICC when crane arrives on site prior to use.
c) Pre-Startup Crane/Derrick Requirements for all ROICC Construction Contracts – General USACE EM 385-1-1 crane requirements.
d) Periodic Inspection – (USACE EM 385-1-1 Appendix H) Completed by contractor prior to initial use on ROICC Projects and submitted with DRI.
e) Start-up Inspection – (USACE EM 385-1-1 Appendix H) Completed by contractor prior to use each day and submitted with DRI.
f) Certificate of Compliance/Crane Operating Permit – Provided by contractor and posted in cab of crane. (A) for Tidewater VA Region only, (B) for all others
g) Crane Pier Operating Permit Application – Completed by contractor for operations on piers only and submitted to ROICC. Information is to be routed through PWC Engineering in Tidewater Region. See examples provided. (Tidewater VA Region only)
(POC Eric Allen (757) 444 – 1138 ext. 3142)
h) Crane OSHA Certification examples – To be verified during QA SPOTCHECK
i) Crane Operator Certification examples – To be verified during QA SPOTCHECK (USACE EM 385-1-1 Appendix G)
j) Weight Handling Equipment Accident Report – Completed by contractor and verified by ROICC in the event of an accident effecting any apparatus within crane envelope.
k) Types of Weight Handling Equipment examples – (P- 307)
l) 01525 SAFETY REQUIREMENTS specification 6/99 – Crane requirements highlighted.
m) Crane QA flow chart.
n) Atlantic Division, Naval Facilities Engineering Command Crane Awareness Training package and reference for ROICC QA personnel.

ROICC CONTRACTOR
ACTIVITY HAZARD ANALYSIS

Page

Location:	Contract Number:	Project Title:
Phase (Division):	Prime Contractor:	Subcontractor(s):

General description for scope of work of this division or other significant activity:

Date of Preparatory Inspection:		Estimated Start Date of Activity:
Division/Activity:	Potential Safety Hazard:	Procedure to Control Hazard:
Equip. To Be Used:	Equip. Inspections Required:	Special Training Requirements for Workers:

Reviewed & Approved:

Prime
Contractor Name: _____

Supt: _____ CQC: _____
(Signature) (Signature)

Subcontractor(s):
Company Name: _____
Foreman: _____

ACTIVITY HAZARD ANALYSIS (Continuation Sheet)

Page

Division/Activity:	Potential Safety Hazard:	Procedure to Control Hazard:

CRANE QA SPOTCHECK

(FOR ROICC QA)

Date: ___/___/___

	YES	NO
1) Has the operator posted a valid Crane Operating Permit?		
2) Is the lift on a pier?		
3) If so, does the operator have a Waterfront Operational Permit?		
4) Does the operator understand all the restrictions on the permit?		
5) Does the operator know the weight of the load to be lifted? (ask)		
6) Is the load to be lifted within the crane manufacturer's rated capacity in its present configuration?(ask)		
7) Is the crane level and on firm ground?		
8) Are outriggers required?		
9) Are outriggers fully extended and down, with the crane load off? the wheels?		
10) If blocking is required, is the entire surface of the outrigger pad supported and is the blocking material of sufficient strength to safely support the outrigger pad?		
11) Is the swing radius of the crane counterweight clear of people and obstructions and accessible areas within the swing area barricaded?		
12) Has the hook been centered over the load?		
13) Will crane boom side loading be prohibited?		
14) Will the load be secured and balanced in the sling or lifting device before it is lifted more than a few inches?		
15) Will the lift and swing path clear of obstructions?		
16) If rotation of the load being lifted is hazardous, is a tag line used?		
17) Are personnel prevented from passing under the load?		
18) Will the crane operator diverted?		
19) Are proper signals being used at all times?		
20) Are start stop motions in a smooth fluid motion (not sudden)?		
21) If operating near electric power lines, are the rules and guidelines for safe clearance understood and adhered to?		
22) Has a critical lift plan been developed if required?		
23) Has the operator met the qualification requirements in App. G?		
24) Is a current OSHA crane certification available on the site?		
25) Has the crane met the performance test requirements?		
26) Has the contractor performed the required Periodic Inspection from App. H prior to using the crane on the site?		
27) Is the contractor performing Daily Startup Inspections?		
28) Has an Activity Hazard Analysis been submitted and reviewed with the workers?		
29) Is crane equipped with anti two-block device if required?		

Contractor:_____

Location: _____ Crane Type: _____

Contract #: _____ Operator Name: _____

NOTES:_____

Pre-Startup Crane/Derrick Requirements
for all ROICC Construction Contracts

US ARMY CORPS of ENGINEERS EM385-1-1 3 SEPT. 96
SECTION 16 MACHINERY AND MECHANIZED EQUIPMENT
16.C - CRANES AND DERRICKS - GENERAL

16.C.02 Every crane shall have the following documents with them at all times they are to be operated:

a. A copy of the operating manual developed by the manufacturer for the specific make and model of crane; a copy of the operating manual for any crane operator aids with which the crane is equipped

b. The load rating chart for the crane, which shall include:

(1) the crane make and model, serial number, and year of manufacturer;
(2) load ratings for all crane operating configurations, including optional equipment;
(3) wire rope type, size, and reeving; line pull, line speed, and drum capacity; and
(4) operating limits in windy or cold weather conditions.

c. The crane's log book which shall be used to record operating hours and all crane inspections, tests, maintenance and repair. The log shall be updated daily as the crane is used and shall be signed by the operator and supervisor: service mechanics shall sign the log after conducting maintenance or repairs on the crane. Proof of performance testing must be in accordance with section 16.C.13 .

16.C.05 Operator qualifications and training.

a. Proficiency qualifications.

(1) Each operator shall be instructed in and qualified for each type of crane or derrick he/she is to operate.
(2) Qualification shall be by written (or oral) and practical operating examination unless the operator is licensed by a state or city licensing agency for the particular type of crane or derrick. (Qualification for operation of a particular type of crane or derrick on a Corps project shall be valid for a period of three years.) **>See Appendix A**
(3) The qualifying examination procedures in Appendix G shall be followed. When the crane manufacturer recommends operator qualifying examination procedures, those procedures shall be in addition to the requirements of **>Appendix G**

b. Operators shall meet the physical qualifications listed in Appendix G: at the minimum, examinations are required annually.

16.C.07 Cranes and derricks shall be operated, inspected, tested and maintained in accordance with the manufacturer's operating manual for the crane.

16.C.08 A hazard analysis shall be developed and implemented for crane set-up and set-down procedures (Mobilization, assembly erection, dismantling, and demobilization).

16.C.12 Inspection of cranes and derricks shall be in accordance with the manufacturer's recommendations. Inspections shall be conducted by a qualified person and shall cover, at the minimum, the items listed in **Appendix H.**

Periodic Inspection to be completed prior to initial use on ROICC Projects
Submit a copy with DRI.

Periodic Inspections
for
Cranes and Derricks

Contract Number _____ **Contractor** _____

Person making inspection _____ **Date** _____

Crane Make:_____ **Model:**_____ **Serial #:**_____

Inspect	**Circle One**
1. Foundation or supports for continued ability to sustain imposed loads.	Pass Fail N/A
2. Braces supporting crane masts (towers) for safe condition; anchor bolt base connections for tightness or retention of preload; wedges and supports of climbing cranes for tightness and proper positioning.	Pass Fail N/A
3. Guys for proper tension.	Pass Fail N/A
4. For derricks, inspect all cords and lacing, tension in guys, plump of the mast, and derrick mast fittings and connections for compliance with manufacturer's recommendations.	Pass Fail N/A
5. Crane structure and boom and jib members, and their connections, for absence of deformation, cracks, or corrosion.	Pass Fail N/A
6. Bolts, rivets, nuts, and pins for tightness.	Pass Fail N/A
7. Proper tension (torque) of high strength (traction) bolts used in connections and at the slewing bearing.	Pass Fail N/A
8. Power plants for performance and compliance with safety requirements.	Pass Fail N/A
9. Electrical apparatus for proper functioning and absence of signs of excessive deterioration, dirt, and moisture accumulation.	Pass Fail N/A
10. Hydraulic and pneumatic tanks, pumps, motors, valves, hoses, fittings, and tubing for proper functioning and absence of damage, leaks, and excessive wear; hydraulic and pneumatic systems for proper fluid/air levels.	Pass Fail N/A
11. All control mechanisms for adjustment for proper operation, no excessive wear of components, and absence of contamination by lubricants or other foreign matter.	Pass Fail N/A
12. Drive components such as pins, bearings, wheels, shafts, gears, sheaves, drums, rollers, locking and clamping devices, sprockets, drive chains or	

belts, bumpers, and stops for absence of wearing, cracks, corrosion, or distortion . Pass Fail N/A

13. All crane function operating mechanisms for proper operation, proper adjustment, and the absence of unusual sounds. Pass Fail N/A

14. Travel, steering, holding, braking and locking mechanisms for proper functioning and absence of excessive wear or damage. Pass Fail N/A

15. Tires for damage or excessive wear. Pass Fail N/A

16. Brake and clutch system parts, linings, pawls, and ratchets for absence of excessive wear. Pass Fail N/A

17. Wire rope. Visually inspect all running ropes, visually inspect all counterweight ropes and load trolley ropes, if provided. Visual inspections should concentrate on discovering gross damage, such as that listed below, which may be an immediate hazard: particular attention should be given to boom hoist ropes and sections of rope subject to rapid deterioration such as at flange points, crossover points, and repetitive pickup points on drums.

    a. Distortion of rope such as kinking, crushing, unstranding, birdcaging, main strand displacement, core protrusion; Pass Fail N/A

    b. general corrosion; Pass Fail N/A

    c. number, distribution, and type of visible broken wires; Pass Fail N/A

    d. broken or cut strands; Pass Fail N/A

    e. core failure in rotation resistant ropes (care shall be taken when inspecting rotation resistant ropes because of their susceptibility to damage from misuse and potential for deterioration when used on equipment with limited design parameters). Pass Fail N/A

    f. reduction of rope diameter below nominal diameter due to loss of core support, internal or external corrosion, or wear of outside wires. Pass Fail N/A

    g. severely corroded or broken wires at end connections, severely corroded, cracked, bent, worn, or improperly applied end connections. Pass Fail N/A

    Care shall be taken when inspecting rope sections subject to rapid deterioration, such as the following: sections in contact with saddles, equalizer sheaves, or other sheaves where rope travel is limited; sections of the rope at or near terminal ends where corroded or broken wires may protrude; sections subject to reverse bends; and sections of rope which are normally hidden during routine visual inspections, such as parts passing over outer sheaves.

18. Sheaves for the absence of cracks in the flanges and spokes. Pass Fail N/A

19. Rope for proper spooling onto drum(s) and sheave(s) and proper reeving. Pass Fail N/A

20. Hooks and latches for absence of deterioration, chemical damage, cracks, and wear. Pass Fail N/A

21. Crane operator aids (safety devices) and indicating devices for proper operation. Pass Fail N/A

22. Motion limiting devices for proper operation with the crane unloaded (each motion should be inched into its limiting device to run in at slow speed with care exercised) and load limiting devices for proper operation and accuracy of settings. Pass Fail N/A

23. Load, boom angle, load or load moment indicating, wind, and other indicators for proper operation and accuracy's within the tolerances recommended by the manufacturer. Pass Fail N/A

24. Safety and function labels for legibility and replacement. Pass Fail N/A

25. For floating plant, inspect ballast compartments for proper ballast; deckloads for proper securing; safety of chain lockers, storage, fuel compartments; battening of hatches; hull void compartments sounded for leakage; tie-downs for barge-mounted land cranes for absence of wear, corrosion, and tightness; cleats, bitts, chocks, fenders, capstans, ladders, stanchions for absence of corrosion, wear, deterioration, and deformation; take four corner draft readings. Pass Fail N/A

Start-up Inspections to be completed before each shift and a copy submitted with the DRI.

START-UP INSPECTIONS
for
Cranes and Derricks
US ARMY CORPS of ENGINEERS EM385-1-1 3 SEPT. 96
(To be used on all ROICC Construction Projects)

Contract number _____ **Contractor** _____

Person making inspection _____ **Date** _____

Crane Make:_____ **Model:**_____ **Serial #:**_____

Inspect	**Circle One**
1. All control mechanisms for maladjustment interfering with proper operation	Pass Fail N/A
2. All control mechanisms for excessive wear of components and contamination by lubricants or other foreign matter.	Pass Fail N/A
3. All operator aids, motion and load limiting devices, and other safety devices for malfunction and inaccuracy of settings.	Pass Fail N/A
4. All cords and Lacing.	Pass Fail N/A
5. All hydraulic and pneumatic systems - with particular emphasis given to those which flex in normal operation of the crane.	Pass Fail N/A
6. Hooks and Latches for deformation, chemical damage, cracks, and wear.	Pass Fail N/A
7. Rope for proper spooling onto the drum(s) and sheave(s) and rope reeving for compliance with crane manufacture's specifications.	Pass Fail N/A
8. Electrical apparatus for malfunctioning, signs of excessive deterioration, dirt, and moisture accumulation.	Pass Fail N/A
9. Hydraulic systems for proper oil level.	Pass Fail N/A
10. Tires for recommended inflation pressure (mobile cranes).	Pass Fail N/A
11. Wedges and supports for looseness or dislocation (climbing tower cranes).	Pass Fail N/A
12. Braces and guys supporting crane masts; anchor bolt base connections for looseness or loss of preload (tower cranes and derricks).	Pass Fail N/A
13. Derrick mast fittings and connections for compliance with manufacture's recommendations.	Pass Fail N/A
14. Barge or pontoon ballast compartments for proper ballast; deckloads for proper securing; chain lockers, storage, fuel compartments, and battening	

(A)

CRANE OPERATING PERMIT

Contractor shall complete this form and submit (1) copy to the Contracting Officer at least 24 hours prior to bringing any crane on Navy property. This form shall be signed by an official of the company that provides cranes for any application under this contract. Contractor shall submit a separate form for each job, the permit will be valid only for the job specified. Post a valid signed copy of this permit on the crane prior to arriving on Navy property. Cranes will **NOT** be allowed to operate until the Contracting Officer has completed a quality assurance check, and signed the block below. All crane operations are subject to periodic surveillance by the Crane Surveillance Team. All cranes must have a valid Waterfront Operational Permit prior to working on any Navy owned pier.

LOCATION: (Include Sketch if required)	DATE(S) OF CRANE OPERATION:

DESCRIPTION OF WORK:

CONTRACTING OFFICE:	CONTRACTING OFFICER / PHONE	CONTRACT NUMBER:

PRIME CONTRACTOR:	POINT OF CONTACT / PHONE:

CRANE CONTRACTOR:	POINT OF CONTACT / PHONE:

CRANE MANUFACTURER:	MODEL:	CAPACITY	CRANE ID #:

GROSS VEHICLE WEIGHT: TRAVEL: OPERATING:	MAX LIFT DURING OPERATION:	MAX OUTRIGGER LOAD DURING OPERATION:

CRANE OPERATOR'S NAME(S):

I certify that:

1. The above noted crane conforms to applicable OSHA regulations (host country regulations for naval activities in foreign countries) and ASME B30 as required. The following regulations apply:_____
2. That the operators noted above have been trained and are qualified for the operation of the above noted crane.
3. That the operators noted above have been trained not to bypass safety devices during lifting operations.

COMPANY OFFICIAL: (signature)	PRINTED NAME / TITLE:	DATE:

TO BE COMPLETED BY CONTRACTING OFFICER'S REPRESENTATIVE PRIOR TO ACCESSING NAVY PROPERTY

ACCESS AUTHORIZED: (signature)	PRINTED NAME:	DATE

TO BE COMPLETED BY CONTRACTING OFFICER'S REPRESENTATIVE AFTER COMPLETING QUALITY ASSURANCE CHECK

Q/A CHECK COMPLETE: (signature)	PRINTED NAME:	DATE

POST ON CRANE

(IN CAB OR VEHICLE)

(B)

CERTIFICATE OF COMPLIANCE

This certificate shall be signed by an official of the company that provides cranes for any application under this contract. Post a completed certificate on each crane brought onto Navy property.

PRIME CONTRACTOR /PHONE:	CONTRACT NUMBER:
CRANE SUPPLIER/PHONE: (if different from prime contractor)	CRANE NUMBER: (i.e., ID number)
CRANE MANUFACTURER/TYPE/CAPACITY:	
CRANE OPERATOR'S NAME(S):	

I certify that:

1. The above noted crane conforms to applicable OSHA regulations (host country regulations for naval activities in foreign countries). The following regulations apply:_____

_____

2. That the operators noted above have been trained and are qualified for the operation of the above noted crane.
3. That the operators noted above have been trained not to bypass safety devices during lifting operations.

COMPANY OFFICIAL SIGNATURE:	DATE:
COMPANY OFFICIAL NAME/TITLE:	

POST ON CRANE

(IN CAB OR VEHICLE)

Waterfront Operational Permit for the Naval Base Norfolk

Owner/Operator	***W.O. Grubb***	Crane ID Number:	***505***
Vehicle Type:	***Mobile Crane***	Vehicle Manufacturer & Model Number:	***Grove TMS-700B***

Crane Specifications:

Gross Vehicular Weight:	**65,989 lbs**	Rear Dual-Axle Load:	**38,604 lbs**
Max Outrigger Reaction:	**59,044 lbs**	Front Dual-Axle Load:	**27,386 lbs**
(Grove Manufacturer)		O/R Spacing: Front- **20'-0"**	Side- **18'-10"**

Pier Access Chart

Pier 12	Pier 11	Pier 10	Pier 7	Pier 5	Pier 4	Pier 3	Pier 2	Pier 25	Pier 25T	Pier 24T	Pier 24	Pier 23	Pier 22	Pier 21	Pier 20	South Wall
G	G	G	Y	G	Y	Y	Y	G	G	G	G	Y	Y	Y	Y	Y

Green(G) - See Green Restrictions Below Yellow(Y) - See Yellow Restrictions Below Red(R) - No Access

General crane operating restrictions for all piers and bulkheads at Naval Station Norfolk waterfront:

-All cranes shall obtain a "Waterfront Operational" permit or approval from Naval Station Norfolk prior to operating on the waterfront.
-No crane outriggers or wheel loads shall be positioned within 5 feet of the pier or bulkhead curbing.
-No crane outriggers shall be placed on utility manhole or access covers.

Additional Restrictions if Applicable:

Green (G) Designation: No additional operating restrictions

Yellow (Y) Designation:

Pier 7 - Cranes shall only operate within the two designated "Crane Operation Areas" identified on the pier.

Pier 4 - Position crane outrigger with maximum load over pier pile cap.
Position other set of outriggers over rail road beams.
Provide 4'x4' cribbing for all outrigger loads over 30,000 pounds.

Pier 3 - Position crane outrigger with maximum load over pier pile cap and over rail road beams.
Provide 4'x4' cribbing under all outriggers.

Pier 2 - Position crane outrigger with maximum load over pier pile cap and over rail road beams.
Provide 4'x4' cribbing under all outriggers.

Pier 23 - Side outriggers shall not be positioned within the center 17-foot pier span.
(No side outriggers positioned within the fire lane).

Pier 22 - Side outriggers shall not be positioned within the center 17-foot pier span.
(No side outriggers positioned within the fire lane).

Pier 21 - Crane shall only travel within the designated "Vehicle Travel Path".
Crane shall only set-up and operated beyond the pier 775-footmark.
Side outriggers shall not be positioned within the center 17-foot pier span.
(No side outriggers positioned within the fire lane).

Pier 20 - Side outriggers shall not be positioned within the center 17-foot pier span.
(No side outriggers positioned within the fire lane).

South Wall - Provide 4'x4" cribbing under all outriggers.

Red (R) Designation: Crane Operations not permitted on the waterfront.

This permit shall be kept inside the operator's cab at all times while on the pier. Contractor has read and understands the imposed restrictions for operating on all piers. Any questions reguarding this permit shall be directed to PWC Engineering Civil-Structural Division at telephone 444-1138.

Contractor Representative	*Date*	*PWC Engineering Approval*	*Date*	*Customer Approval*	*Date*

Permit Issue Date ***Permit Expiration Date***

JOB INFORMATION

CUSTOMER: _____

- -R & SHIP: _____

.E(S) OF OPERATION: _____

CONTRACTING OFFICER: _____

TELEPHONE: _____

CRANE CONTRACTOR: _____

TELEPHONE: _____

CRANE INFORMATION

MANUFACTURER: _____

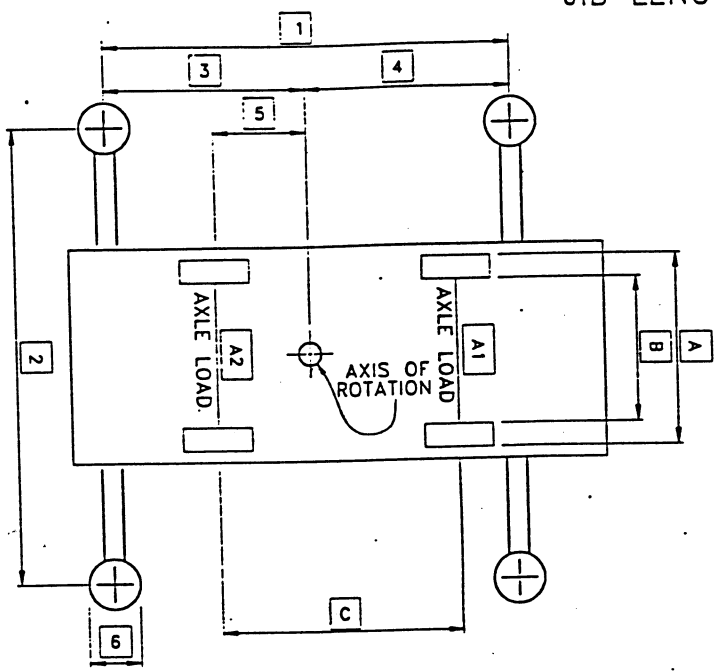
MODEL NUMBER: _____

CRANE I.D. NUMBER: _____

OPERATIONAL CRANE WEIGHT: _____

OPERATING BOOM LENGTH: _____

JIB LENGTH: _____



AXLE INFORMATION

[A1] AXLE LOAD: _____

[A2] AXLE LOAD: _____

LIFTING INFORMATION

MAXIMUM LIFT: _____

MINIMUM LOAD RADIUS: _____

MAXIMUM LOAD RADIUS: _____

MAXIMUM OUTRIGGER REACTION DURING LIFT: _____

(PROVIDE SOURCE OF INFORMATION) _____

WHEEL INFORMATION

[A] OUTER WHEEL BASE: _____

[B] INNER WHEEL BASE: _____

[C] DISTANCE BETWEEN AXLES: _____

OUTRIGGER INFORMATION

[1] DISTANCE BETWEEN OUTRIGGERS: _____

[2] DISTANCE BETWEEN OUTRIGGERS: _____

[3] DISTANCE OF REAR OUTRIGGER TO AXIS OF ROTATION: _____

[4] DISTANCE OF FRONT OUTRIGGER TO AXIS OF ROTATION: _____

[5] DISTANCE OF REAR AXLE TO AXIS OF ROTATION: _____

[6] OUTRIGGER DIMENSIONS: _____

2 – AXLE CRANE OPERATION DATA SHEET

SHEET 1

PWC CODE 410 RECOMMENDATIONS:

JOB INFORMATION

CUSTOMER: _____

PIER & SHIP: _____

SITE(S) OF OPERATION: _____

CONTRACTING OFFICER: _____

TELEPHONE: _____

CRANE CONTRACTOR: _____

TELEPHONE: _____

VEHICLE INFORMATION

MANUFACTURER: _____

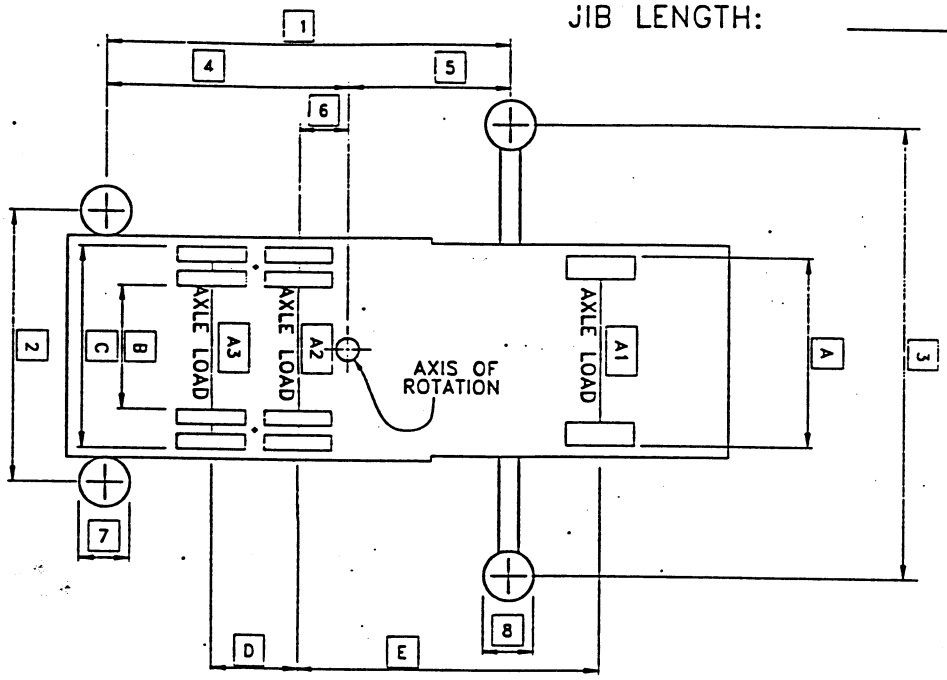
MODEL NUMBER: _____

CRANE I.D. NUMBER: _____

OPERATIONAL CRANE WEIGHT: _____

OPERATING BOOM LENGTH: _____

JIB LENGTH: _____



WHEEL INFORMATION

[A] OUTER WHEEL BASE: _____

[B] INNER WHEEL BASE: _____

[C] OUTER WHEEL BASE: _____

[D] DISTANCE BETWEEN REAR AXLES: _____

[E] DISTANCE BETWEEN AXLES: _____

LIFTING INFORMATION

MAXIMUM LIFT: _____

MINIMUM LOAD RADIUS: _____

MAXIMUM LOAD RADIUS: _____

MAXIMUM OUTRIGGER REACTION DURING LIFT: _____

(PROVIDE SOURCE INFORMATION) _____

AXLE INFORMATION (OPERATIONAL)

[A1] AXLE LOAD: _____

[A2] AXLE LOAD: _____

[A3] AXLE LOAD: _____

OUTRIGGER INFORMATION

[1] DISTANCE BETWEEN OUTRIGGERS: _____

[2] DISTANCE BETWEEN OUTRIGGERS: _____

[3] DISTANCE BETWEEN OUTRIGGERS: _____

[4] DISTANCE OF REAR OUTRIGGER TO AXIS OF ROTATION: _____

[5] DISTANCE OF FRONT OUTRIGGER TO AXIS OF ROTATION: _____

[6] DISTANCE OF FIRST REAR AXLE TO AXIS OF ROTATION: _____

[7] OUTRIGGER DIMENSIONS: _____

[8] OUTRIGGER DIMENSIONS: _____

BOOM TRUCK/CHERRY PICKER OPERATION DATA SHEET

SHEET 2

PWC CODE 410 RECOMMENDATIONS:

JOB INFORMATION

CUSTOMER: _____

ORDER & SHIP: _____

SITE(S) OF OPERATION: _____

CONTRACTING OFFICER: _____

TELEPHONE: _____

CRANE CONTRACTOR: _____

TELEPHONE: _____

CRANE INFORMATION

MANUFACTURER: _____

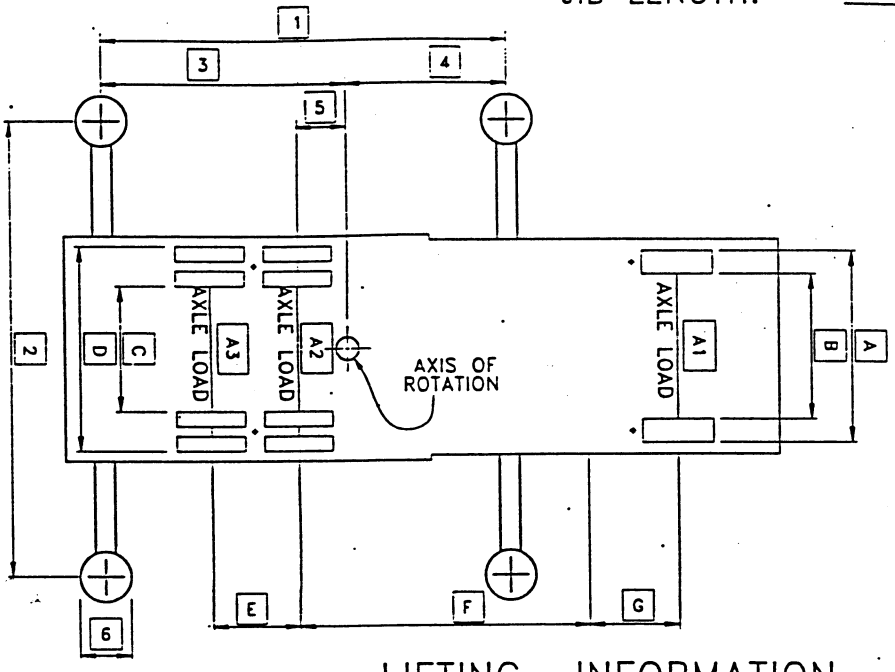
MODEL NUMBER: _____

CRANE I.D. NUMBER: _____

OPERATIONAL CRANE WEIGHT: _____

OPERATING BOOM LENGTH: _____

JIB LENGTH: _____



AXLE INFORMATION

[A1] AXLE LOAD: _____

[A2] AXLE LOAD: _____

[A3] AXLE LOAD: _____

LIFTING INFORMATION

MAXIMUM LIFT: _____

MINIMUM LOAD RADIUS: _____

MAXIMUM LOAD RADIUS: _____

MAXIMUM OUTRIGGER REACTION DURING LIFT: _____

(PROVIDE SOURCE OF INFORMATION) _____

WHEEL INFORMATION

[A] OUTER WHEEL BASE: _____

[B] INNER WHEEL BASE: _____

[C] INNER WHEEL BASE: _____

[D] OUTER WHEEL BASE: _____

[E] DISTANCE BETWEEN REAR AXLES: _____

[F] DISTANCE BETWEEN ALXES: _____

[G] DISTANCE BETWEEN FRONT ALXES: _____

OUTRIGGER INFORMATION

[1] DISTANCE BETWEEN OUTRIGGERS: _____

[2] DISTANCE BETWEEN OUTRIGGERS: _____

[3] DISTANCE OF REAR OUTRIGGER TO AXIS OF ROTATION: _____

[4] DISTANCE OF FRONT OUTRIGGER TO AXIS OF ROTATION: _____

[5] DISTANCE OF FIRST REAR AXLE TO AXIS OF ROTATION: _____

[6] OUTRIGGER DIMENSIONS: _____

3 – AXLE CRANE OPERATIONAL DATA SHEET

SHEET 3

PWC CODE 410 RECOMMENDATIONS:

JOB INFORMATION

CUSTOMER: _____

PIER & SHIP: _____

.TE(S) OF OPERATION: _____

CONTRACTING OFFICER: _____

TELEPHONE: _____

CRANE CONTRACTOR: _____

TELEPHONE: _____

CRANE INFORMATION

MANUFACTURER: _____

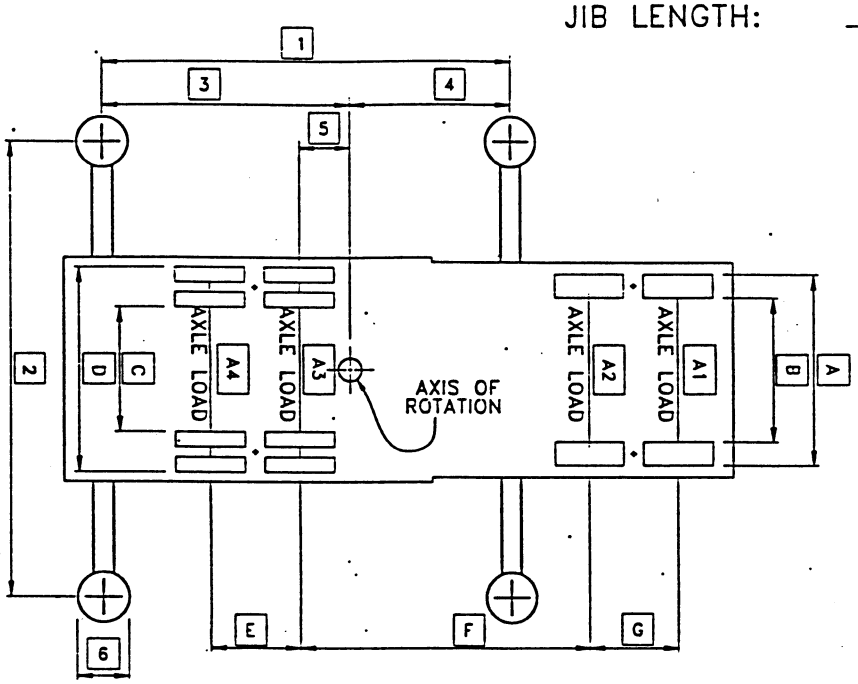
MODEL NUMBER: _____

CRANE I.D. NUMBER: _____

OPERATIONAL CRANE WEIGHT: _____

OPERATING BOOM LENGTH: _____

JIB LENGTH: _____



AXLE INFORMATION

A1 AXLE LOAD: _____

A2 AXLE LOAD: _____

A3 AXLE LOAD: _____

A4 AXLE LOAD: _____

LIFTING INFORMATION

MAXIMUM LIFT: _____

MINIMUM LOAD RADIUS: _____

MAXIMUM LOAD RADIUS: _____

MAXIMUM OUTRIGGER REACTION DURING LIFT: _____

(PROVIDE SOURCE OF INFORMATION) _____

WHEEL INFORMATION

A OUTER WHEEL BASE: _____

B INNER WHEEL BASE: _____

C INNER WHEEL BASE: _____

D OUTER WHEEL BASE: _____

E DISTANCE BETWEEN REAR AXLES: _____

F DISTANCE BETWEEN ALXES: _____

DISTANCE BETWEEN FRONT ALXES: _____

OUTRIGGER INFORMATION

1 DISTANCE BETWEEN OUTRIGGERS: _____

2 DISTANCE BETWEEN OUTRIGGERS: _____

3 DISTANCE OF REAR OUTRIGGER TO AXIS OF ROTATION: _____

4 DISTANCE OF FRONT OUTRIGGER TO AXIS OF ROTATION: _____

5 DISTANCE OF FIRST REAR AXLE TO AXIS OF ROTATION: _____

6 OUTRIGGER DIMENSIONS: _____

(4 OUTRIGGER PADS)

4 – AXLE CRANE OPERATIONAL DATA SHEET

SHEET 4

PWC CODE 410 RECOMMENDATIONS:

JOB INFORMATION

CUSTOMER: _____

PIER & SHIP: _____

TE(S) OF OPERATION: _____

CONTRACTING OFFICER: _____

TELEPHONE: _____

CRANE CONTRACTOR: _____

TELEPHONE: _____

CRANE INFORMATION

MANUFACTURER: _____

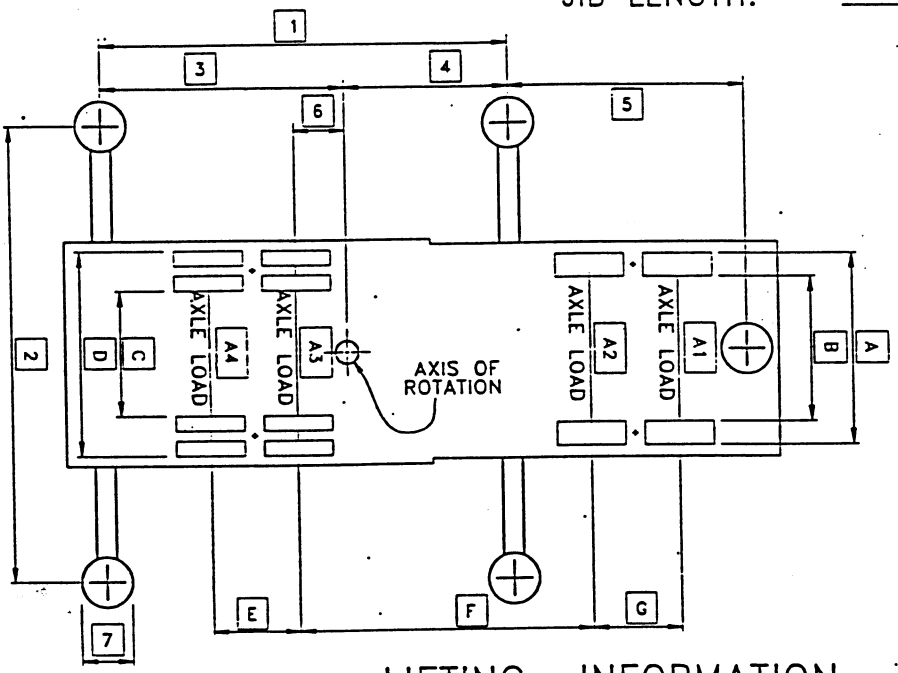
MODEL NUMBER: _____

CRANE I.D. NUMBER: _____

OPERATIONAL CRANE WEIGHT: _____

OPERATING BOOM LENGTH: _____

JIB LENGTH: _____



AXLE INFORMATION

A1 AXLE LOAD: _____

A2 AXLE LOAD: _____

A3 AXLE LOAD: _____

A4 AXLE LOAD: _____

LIFTING INFORMATION

MAXIMUM LIFT: _____

MINIMUM LOAD RADIUS: _____

MAXIMUM LOAD RADIUS: _____

MAXIMUM OUTRIGGER REACTION DURING LIFT: _____

(PROVIDE SOURCE OF INFORMATION) _____

WHEEL INFORMATION

A OUTER WHEEL BASE: _____

B INNER WHEEL BASE: _____

C INNER WHEEL BASE: _____

D OUTER WHEEL BASE: _____

E DISTANCE BETWEEN REAR AXLES: _____

F DISTANCE BETWEEN ALXES: _____

G DISTANCE BETWEEN FRONT ALXES: _____

OUTRIGGER INFORMATION

1 DISTANCE BETWEEN OUTRIGGERS: _____

2 DISTANCE BETWEEN OUTRIGGERS: _____

3 DISTANCE OF REAR OUTRIGGER TO AXIS OF ROTATION: _____

4 DISTANCE OF FRONT OUTRIGGER TO AXIS OF ROTATION: _____

5 DISTANCE OF FIFTH OUTRIGGER TO FRONT OUTRIGGER: _____

6 DISTANCE OF FIRST REAR AXLE TO AXIS OF ROTATION: _____

7 OUTRIGGER DIMENSIONS: _____ (5 OUTRIGGER PADS)

4 – AXLE CRANE OPERATIONAL DATA SHEET

SHEET 5

PWC CODE 410 RECOMMENDATIONS:

JOB INFORMATION

CUSTOMER: _____

PIER & SHIP: _____

E(S) OF OPERATION: _____

CONTRACTING OFFICER: _____

TELEPHONE: _____

CRANE CONTRACTOR: _____

TELEPHONE: _____

CRANE INFORMATION

MANUFACTURER: _____

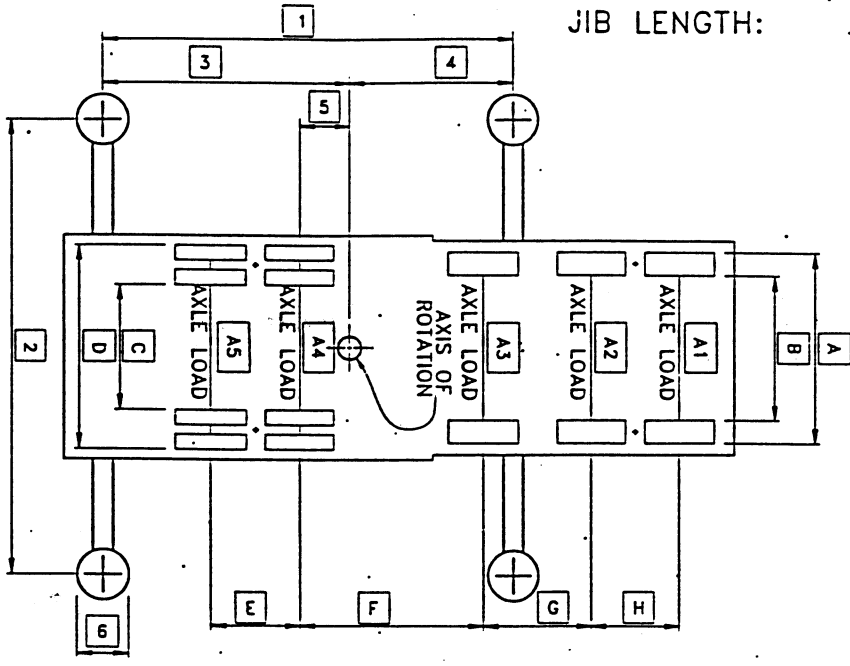
MODEL NUMBER: _____

CRANE I.D. NUMBER: _____

OPERATIONAL CRANE WEIGHT: _____

OPERATING BOOM LENGTH: _____

JIB LENGTH: _____



AXLE INFORMATION

A1 AXLE LOAD: _____

A2 AXLE LOAD: _____

A3 AXLE LOAD: _____

A4 AXLE LOAD: _____

A5 AXLE LOAD: _____

LIFTING INFORMATION

MAXIMUM LIFT: _____

MINIMUM LOAD RADIUS: _____

MAXIMUM LOAD RADIUS: _____

MAXIMUM OUTRIGGER REACTION DURING LIFT: _____

(PROVIDE SOURCE OF INFORMATION) _____

WHEEL INFORMATION

A OUTER WHEEL BASE: _____

B INNER WHEEL BASE: _____

C INNER WHEEL BASE: _____

D OUTER WHEEL BASE: _____

E AXLE DISTANCE: _____

F AXLE DISTANCE: _____

G AXLE DISTANCE: _____

AXLE DISTANCE: _____

OUTRIGGER INFORMATION

1 DISTANCE BETWEEN OUTRIGGERS: _____

2 DISTANCE BETWEEN OUTRIGGERS: _____

3 DISTANCE OF REAR OUTRIGGER TO AXIS OF ROTATION: _____

4 DISTANCE OF FRONT OUTRIGGER TO AXIS OF ROTATION: _____

5 DISTANCE OF FIRST REAR AXLE TO AXIS OF ROTATION: _____

6 OUTRIGGER DIMENSIONS: _____

5-AXLE CRANE OPERATIONAL DATA SHEET

SHEET 6

PWC CODE 410 RECOMMENDATIONS:

JOB INFORMATION

CUSTOMER:

CONTRACTOR:

TELEPHONE:

DATE(S) OF OPERATION:

CRANE INFORMATION

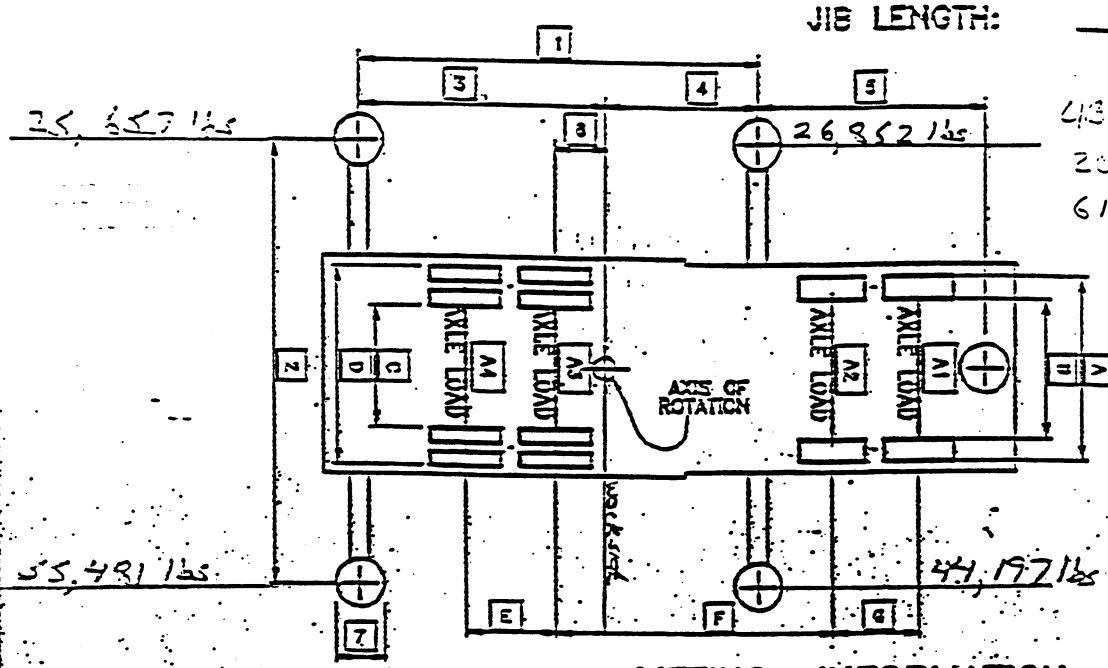
MANUFACTURER: Grove

MODEL NUMEER: TMS 870

OPERATIONAL CRANE WEIGHT: 109,200

OPERATING BOOM LENGTH: 138'

JIB LENGTH: 56'



413 Ton
200' Tag
61' Boom

AXLE INFORMATION

A1	AXLE LOAD:	20,786
A2	AXLE LOAD:	20,786
A3	AXLE LOAD:	23,184
A4	AXLE LOAD:	23,184

LIFTING INFORMATION

MAXIMUM LIFT:	43000 lbs
MINIMUM LOAD RADIUS:	25'
MAXIMUM LOAD RADIUS:	20'
MAXIMUM OUTRIGGER REACTION DURING LIFT:	See Attached Schematic

(PROVIDE SOURCE OF INFORMATION) Grove Cust. Serv.

WHEEL INFORMATION

A	OUTER WHEEL BASE:	8'5"
B	INNER WHEEL BASE:	5'6"
C	INNER WHEEL BASE:	4'1"
D	OUTER WHEEL BASE:	8'5"
E	DISTANCE BETWEEN REAR AXLES:	5'1"
F	DISTANCE BETWEEN ALXES:	13'6"
G	DISTANCE BETWEEN FRONT ALXES:	4'11½"

OUTRIGGER INFORMATION

1	DISTANCE BETWEEN OUTRIGGERS:	18'5"
2	DISTANCE BETWEEN OUTRIGGERS:	24'
3	DISTANCE OF REAR OUTRIGGER TO AXIS OF ROTATION:	9'8"
4	DISTANCE OF FRONT OUTRIGGER TO AXIS OF ROTATION:	8'9"
5	DISTANCE OF FIFTH OUTRIGGER TO FRONT OUTRIGGER:	14'
8	DISTANCE OF FIRST REAR AXLE TO AXIS OF ROTATION:	19½"
7	OUTRIGGER DIMENSIONS:	24"

4 – AXLE CRANE OPERATIONAL DATA SHEET (5 OUTRIGGER PADS)

NORFOLK NAVAL STATION

FWC CODE 410 RECOMMENDATIONS:

SHEET 5

From: Theisz, Eddy L.
Sent: Wednesday, June 23, 1999 8:19 AM
To: Yarbrough, Jerry M.; Bruce Leach; Chief McDermott; David Allen; Dickie Clement; Edmonds, Johnny E; Eric Allen; Frank Cole; Josephus Smith, Jr.; Mark Bierce; Merriett Cox; Norfolk Piers Crane Access; Paul Milbourn; Raymond Ives, Jr.; Ronald Schindler; William Landon, Jr.
Cc: SUPSHIP-Cherry; SUPSHIP-Cindy White; SUPSHIP-Don Drelick; SUPSHIP-Leon Stocks; SUPSHIP-STALLINGS; SUPSHIP-W. Pristou; SUPSHIP-Williams
Subject: Crane Access-NAVSTA-Pier 20 (Gresham, 63)

To all:

J. C. Driskill/ROICC Norfolk has requested access on Pier 20 for a E. T. Gresham, Grove TMS-870 crane. The work is to support the P-354 MILCON on 6/23/99. The following information was provided:

Crane Identification No: 63
Gross Operational
Vehicular Weight: 109,200 lbs. (With Counterweights on the vehicle)

Front dual-axle load: 41,786 lbs.
Rear dual-axle load: 46,368 lbs.
87,940 lbs. (Without Counterweights on the vehicle)

Distance between outriggers: Front: 24'-0", Side 18'-5"

Maximum Outrigger Reaction for designated lift: 55,481 lbs. (Outrigger information provided by Grove Customer Support)

The wheel and outrigger loads identified are within the guidelines established for crane operations on the pier. We can therefore recommend that this crane be allowed access under the following conditions:

- Maximum lift: 43,000 lbs.
- Minimum Load Radius: 20'-0"
- Maximum Load Radius: 25'-0"

- Crane shall only travel and set-up within the designated crane area. (Yellow "Fire Lane Striping" painted along the center section of the pier deck)
- No outrigger pads shall be placed within 5'-0" of the pier curbing.
- No side outrigger pads shall be positioned within the "Fire Lane Striping" Area
- No outrigger pads shall be placed on utility or manhole covers

Please pass this information along.

Eddy L. Theisz
(757) 444-1138 ext. 3139
fax no. (757) 445-1924

Certificate of Unit Test and/or Examination of Crane, Derrick, or Other Material

U.S. DEPARTMENT OF LABOR
Occupational Safety and Health Administration

Paperwork Reduction Act Notice

Public reporting burden for this collection of information is estimated to vary from 5 to 10 minutes per response with an average of 7 minutes per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to the Office of IRM Policy, Department of Labor, Room N-1301, 200 Constitution Avenue, NW, Wash., DC 20210; and to the Office of Management and Budget, Paperwork Reduction Project (1218-0003), Wash., DC 20503.

DO NOT SEND THE COMPLETED FORM TO EITHER OF THESE OFFICES

Form Approved
OMB No. 1218-0003
Expires 1-31-95

This certificate may be issued only by persons acting under current accreditation by the Occupational Safety and Health Administration under the provisions of 29 CFR Part 1919, or otherwise specifically authorized to do so by the Occupational Safety and Health Administration. Use of this certificate by unauthorized persons is prohibited. Violators may subject themselves to the penalties provided in 33 U.S.C. 941 (P.L. 85-742) and/or 29 U.S.C. 655 (P.L. 91-596).

Certificate No.: 4280-99-1

1. Owner: E.T. GRESHAM, INC. 1038 W 26TH STREET NORFOLK, VA 23501

2. Description (check):

- [X] Crane (describe type (truck, rail, etc.)): TRUCK
- [ ] Derrick (describe):
- [ ] Other (describe):

If spout or other device, describe:

Location:

- [ ] (a) Remains at worksite
- [X] (b) Changes Worksite
- [ ] (c) Aboard vessel

If (a) or (c), describe:

Manufacturer	Model	Serial No.
GROVE	TMS870	84465

Owner's identification, if any: #63

3. Service status at time of survey (check): MAIN - 3 PARTS - 3/4" DYFORM

- [X] Lifting
- [ ] Magnet
- [ ] Clamshell
- [ ] Other (describe): 7 FALL

4. Boom at time of survey (except bridge cranes):

Length: 138'

Type: HYDRAULIC TELESCOPIC

5. Test loads applied (cross out if only examination conducted):

Radius	Proof Loads	Rated Loads
FUNCTION TESTING USING	N/A	N/A
4,700 LBS.	N/A	N/A
N/A	N/A	N/A

Means of application of proof load: N/A

Basis for assigned load ratings: RATED CAPACITY

6. Remarks and/or limitations imposed: NONE

7. Load indicating or limited device (check):

- [X] Fitted
- [ ] Not fitted
- [X] Accuracy: SAE LIMITS

I certify that on the 12th day of APRIL, 19 99, the above described device was ~~tested and examined~~ (examined) by the undersigned or his authorized representative, that said ~~test and examination~~ (examination) met in all respects with the requirements of 29 CFR Part 1919 or with requirements declared compatible under the provisions of 29 CFR 1917.50(b)(2), any deficiencies considered to constitute an unsatisfactory conditions havce been corrected; and that the device has been found to be in compliance in all applicable respects with the governing requirements.

Name and address of accredited or otherwise authorized organization making the test and/or examination:
TIDEWATER TESTING SVCS., INC. 375 POPLAR LAWN ROAD SURRY, VA 23883

Name and address of authorized person carrying out the test and/or examination:
J.W. RILEY, JR. / SAME

Position of signatory in the organization making the test and/or examination:
SENIOR SURVEYOR

Signature:

Date: APRIL 12, 1999

Previous editions obsolete

OWNER'S COPY

OSHA 71 Rev July 1993

TIDEWATER TESTING SERVICES
375 POPLAR LAWN ROAD • SURRY, VIRGINIA 23883 • (757) 294-5112

CERTIFICATE
OF
LOAD TESTING
AND
CONDITION INSPECTION

OWNER E.T. GRESHAM, INC.

ADDRESS 1038 W 26TH STREET NORFOLK, VA 23501

TYPE OF CRANE TRUCK MOBILE HYDRAULIC

CRANE IDENTIFICATION NO. GROVE S# 84465 M# TMS870 #63

MECHANICAL, ELECTRICAL, STRUCTURAL APRIL 12, 1999 (date)

CERTIFIED SATISFACTORY J.W. RILEY, JR. (surveyor)

LOAD TESTED N/A (date) AND SATISFACTORY LIFTED N/A

OF RATED LOAD N/A (surveyor)

THIS IS TO CERTIFY THAT THE ABOVE CRANE WAS ☒ INSPECTED AND ☐ LOAD TESTED ON DATES SPECIFIED AND FOUND SATISFACTORY TO HANDLE THE FOLLOWING RATED LOADS AT THE DISTANCES IN ACCORDANCE WITH

CFR29 PART 1919 FUNCTION TESTING USING 4,700 LBS.
ANNUAL SURVEY

MAIN HOIST HOOK	N/A	LBS AT	N/A	FT RADIUS
AUXILIARY HOIST HOOK	N/A	LBS AT	N/A	FT RADIUS
WHIP HOIST HOOK	N/A	LBS AT	N/A	FT RADIUS

surveyor

GROVE worldwide

CERTIFICATE OF TEST AND INSPECTION

CRANE MODEL: TMS 870 S/N: 84465
DATE OF MANUFACTURE: March - 1997
CARRIER ENGINE S/N: 34852191
DATE OF TEST: April 14, 1997

MAXIMUM RATED CAPACITY: 140,000 lb
RADIUS: @ 10'
BOOM LENGTH: 35' - 138' 5 Section
DATE OF FINAL INSPECTION: April 23, 1997

BASIS FOR ASSIGNED LOAD RATINGS: Structural strength and stability
LOAD CHART: 85% Domestic
DESCRIPTION OF PROOF LOAD: Minimum 110% of rated load using certified weights.

TEST LOADS APPLIED:

	(deg) OFFSET	(ft) JIB	(ft) BOOM	(ft) RADIUS	(lb) PROOF	(lb) RATED	(Y/N) OUTRIGGERS	BOOM DIRECTION
1.			35	10	158,000	140,000	YES	360 DEG
2.			35	15	106,000	95,800	YES	360 DEG
3.			138	*	20,906	19,000	YES	360 DEG
4.	1.5	31.0	125	*	12,653	11,500	YES	360 DEG
5.	1.5	31.0	138	35	10,471	9,500	YES	360 DEG
6.	45	31.0	125	*	8,829	8,000	YES	360 DEG
7.	45	31.0	138	*	8,607	7,800	YES	360 DEG
8.	1.5	56.0	125	40	7,652	6,950	YES	360 DEG
9.	1.5	56.0	138	*	6,099	5,500	YES	360 DEG

* Maximum Boom Angle

TEST LOADS SPECIFIED INCLUDES WEIGHTS OF ALL LOAD HANDLING EQUIP, (SLING, HOOK, ETC.) -REMARKS: See crane load chart for approved lifts.-

I hereby certify the above described crane has been tested and inspected, (examined) after having successfully demonstrated its ability to perform under the above load conditions, any deficiencies considered to constitute an unsatisfactory condition have been corrected.

Dennis R. McClanahan
Quality Engineer
May 13, 1997

E.T. GRESHAM

CONSTRUCTION • CRANE & RIGGING • INDUSTRIAL SERVICES

JC Driskill
1413 Air Rail Ave
Virginia Beach , VA

June 22, 1999

Attn: Glenn

Dear Sir or Madam:,

Per your request, please find enclosed Ceritfication of Load Testing and Condition Inspection of our crane #63 and Operator Certification. The Operator in question, has had over 8 years experience with as an operatering engineer in crane operations. These Certifications are being sent in support of our contract with your company for work on Wed., June 23, 1999 on the NOB Pier 20. Please forward this information to Leon Stockes, in Sup Ship Safety Division. His fax number is 396-4175 and his office number is 396-4724.

Our crane will be arriving at the Pier at 12:30pm. We will need a representative of your company and a representative of Sup Ship there before we can proceed on the pier.

If there are any other questions about these certifications or our experience, please call us at 622-2500.

Sincerely,

E. T. GRESHAM COMPANY, Inc.

Lisa A Clayton,
Admin Assistant

Mailing Address:
P. O. Box 1077
Norfolk, VA 23501-1077

Street Address:
1038 West 26th Street
Norfolk, VA 23517

757- 627-4583
FAX: 757-625-7705
1-800-617-4583 Outside Hampton Roads
e-mail: etgresham@compuserve.com

E.T.GRESHAM COMPANY, Inc.

The National Commission for the Certification of Crane Operators, Inc. (CCO) is a non-profit organization established to develop and administer examinations to test the adequacy of knowledge and skills of crane operators.

Certification designations are given in the following categories:

1. **Lattice Boom Truck Cranes**
2. **Lattice Boom Crawler Cranes**
3. **Small Telescopic Boom Cranes (less than 17.5 tons)**
4. **Large Telescopic Boom Cranes (more than 17.5 tons)**

Any questions regarding the status of the cardholder indicated on the front of this card should be addressed to: Professional Examination Service (PES), CCO (861) Testing Office, 475 Riverside Drive, New York, NY 10115-0089. Tel: 1-800-457-3926. Address other requests for information on the CCO certification program to: The National Commission for the Certification of Crane Operators, Inc., 2750 Prosperity Avenue, Suite 120, Fairfax, VA 22031-4312. Tel: (703) 560-2391.

Certification number:
78

Certificate issue date:
Apri[illegible]

Designations:
3 4

Issued to:
DARRYL

VIRGINIA BEACH, VA 23452

Carole L. Haasycast, President, CCO Board of Directors

Graham J. Brent, Executive Director, CCO

For identification purposes only. Subject to provisions of suspension or revocation.

National Commission for the Certification of Crane Operators

International Union of Operating Engineers,

LOCALS 147, 147-A, 147-B, 147-C, 147-D, 147-R

MAIN OFFICE
3 KOGER EXECUTIVE CENTER - SUITE 123
NORFOLK, VIRGINIA 23502
PHONE 757—461-1505
FAX 757—461-0476

C. Ray Davenport
Business Manager

A.F.L. C.I.O.

Charles V. Jenkins
Business Agent

BRANCH OFFICE
3801 JEFFERSON DAVIS HIGHWAY
RICHMOND, VIRGINIA 23234
PHONE 804—275-7581
FAX 804—275-4917

Terry L. Williams
Business Agent

October 9, 1997

TO WHOM IT MAY CONCERN:

Mr. SS was initiated into the Apprenticeship Program of the International Union of Operating Engineers, Local No. , April 19, 1985. IUOE Local No. 's Apprenticeship progam is a state certified program that consists of over 6,000 hours on the job training, and 432 hours classroom training. Mr. learned how to operate and do maintenance on various construction equipment. He graduated from the Apprenticeship program on August 19, 1989. He has continued to work at the trade since that time.

He is now employed by Tidewater Crane & Rigging. If you have absolutely any questions or need any additonal information, please do not hesitate to contact the undersigned.

Very Truly yours,

C. Ray Davenport

C. Ray Davenport
Business Manager

BACK-UP CRANE OPERATOR

How Do I Test?

The National Commission for the Certification of Crane Operators (CCO) examinations are competency-based examinations for crane operators reflective of crane operator knowledge and expertise. CCO was formed for the purpose of setting standards for measuring the knowledge and proficiency required for the safe operation of cranes, in order to assess the skills and abilities of current and future operators of cranes in all industries

The written examinations have been developed in cooperation with Professional Examination Service (PES), a non-profit testing company founded in 1941. Since that time, PES has specialized in the development and administration of national certification and licensing examinations of the highest quality. The written examination program consists of a Core examination in crane operation, as well as four crane Specialty examinations. PES assists CCO in the development, administration, and scoring of the CCO written examinations

The CCO practical examinations have been developed in cooperation with Experior Assessments LLC (formerly NAI/Block), a psychometric specialist with a solid background in construction-related assessment. Once candidates have taken and passed the Written Examinations described here, they should contact their Test Site Coordinator to schedule a Practical Examination.

CCO Written Exams Available

CORE EXAMINATION

All candidates are required to take the Core examination regardless of the Specialty in which they wish to be certified.

SPECIALTY EXAMINATIONS

Lattice Boom Crawler Cranes
Lattice Boom Truck Cranes
Small Telescopic Boom Cranes (< 17.5 tons)
Large Telescopic Boom Cranes (> 17.5 tons)

Candidates must register for at least one Specialty examination.

Obtaining An Application

Candidates may request an application to sit for the written examination or obtain information from:

National Commission for the Certification of Crane Operators
(CCO)
2750 Prosperity Avenue, Suite 120
Fairfax, VA 22031-4312
Phone: 703-560-2391
Fax: 703-560-2392

Procedures

The CCO written certification examinations are administered on demand at employers' sites and elsewhere on every second weekend (either Saturday or Sunday) of each month. The application fees listed below are based on a minimum of 25 candidates taking the test at one site at one time

Test Sites must notify CCO at least four (4) weeks ahead of the desired test date to schedule a test. Candidate applications must be submitted with the appropriate documentation to PES at least two (2) weeks before the scheduled examination date. Candidates eligible to sit for the examinations will receive an admission ticket approximately one (1) week before the scheduled test administration date

Sites with fewer than 25 candidates can be accommodated for an additional overhead fee of $30 per candidate short of the 25 candidate minimum. For example, a site with 20 candidates (i.e. short 5 candidates) would be subject to an additional fee of $150 (5 x $30 = $150).

Testing on the *fourth weekend* of each month is also available for an additional overhead fee of $200, and at other times by arrangement; contact CCO at (703) 560-2391 for details.

If you want to apply for your site to be an official test site, download a **Test Site Application Form**. If you have already been approved as a CCO Test Site and wish to schedule a test, download a **Test Administration Request Form**.

Application Fees

The application fees for the Written Examination are	
Core Exam plus any 1 Specialty Exam	$150.00
Each additional Specialty Exam	$ 5.00
Retesting application fees are	
Core Exam plus any 1 Specialty Exam	$150.00
1 Specialty Exam (Core Passed)	$ 50.00
Each additional Specialty Exam	$ 5.00
OTHER FEES	
Late Fees	$ 60.00

Deadlines

Please note that all deadlines are RECEIPT deadlines and that candidates/Test Site Coordinators are solely responsible for making sure that complete and accurate applications reach PES by the stated deadline.

Applications received after the application deadline but (7) business days before the examination date will be subject to a $60.00 late fee. If no late fee is enclosed, or if the application materials are received less than (7) business days before the examination date, the application(s) will be returned.

1999 CCO Examination Written Schedule

Available Test Administrations	Test Administration and Special Accommodation Request Deadlines	Application Deadlines	Late Application Deadlines
January 9 - 10	December 11, 1998	December 23, 1998	Dec. 30, 1998
February 13 - 14	January 15	January 29	February 3
March 13 - 14	February 12	February 26	March 3
April 10 - 11	March 12	March 26	March 31
May 22 - 23*	April 23	May 7	May 12
June 12 - 13	May 14	May 28	June 2
July 10 - 11	June 11	June 25	June 30
August 14 - 15	July 16	July 30	August 4

September 11 - 12	August 13	August 27	September 1
October 9 - 10	September 10	September 24	September 2
November 13 - 14	October 15	October 29	November 3
December 11 - 12	November 12	November 24	December 1

NOTE: This information is abbreviated from the official CCO Candidate Handbook, which also contains all necessary Applications Forms and Instructions.

Download CCO Candidate Handbook
Microsoft Word File 6.0 (347k)

Back to Top

CRANE AWARENESS and TRAINING SERVICES

Safety First!

Our Purpose

Mobile equipment has developed into its own entity over the years. Today is it a sop high-tech, and demanding piece of equipment. It is my belief that there is a continuir have the most information possible regarding the safety and proper operation and ri procedures for these machine. The more the operator knows, the more safely he op

Services Offered

We provide comprehensive classroom seminars held at your location. Our topics inc

- OSHA 1926.550 Construction Industry
- OSHA 1910.180 General Industry
- Overview of ANSI B30.5
- Analyzing the correct operation and heavy rigging procedures for mobile equi (crawler, truck, rough terrain cranes)
- Analyzing real crane accidents for cause and preventive measure

Our seminars can be tailored to suit your company's needs.

Other services we provide include:

- Crane Operator Certification
- On-Site Crane and Hoist Inspection

About The Instructor

Chuck Cooke is a certified crane operator with over 20 years experience in the cran His background includes an extensive variety of courses at crane manufacturers suc

- Grove Worldwide Crane
- Demag Crane (Germany)
- Link-Belt Construction Equipment

He has received extensive training and certifications in a variety of areas, including:

- OSHA Compliance for General Industry
- Industrial Accident Investigation
- First Aid/CPR
- Hazardous Materials First Responder Awareness
- OSHA 40 Hour Haz-Mat
- OSHA 10 Hour Construction Safety and Health Course
- Supervisor Safety Development 14 Hour Course
- 4 Year Operating Engineer Apprenticeship through IUOE Local 147
- General Firemanship I and II Certification
  (Chesterfield County VA Fire Department 1975-1976)

Chuck is currently responsible for crane accident investigations, crane recovery writi implementing crane lift-procedures.

Our Clients

Organizations that have participated in our seminars include some of the largest org Virginia that use cranes in their daily operations. Our clients include:

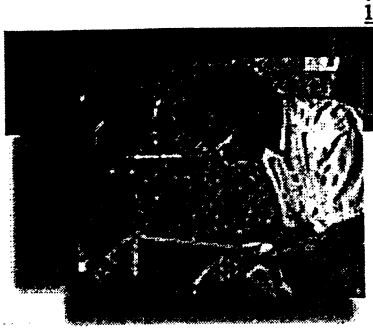
- Chesterfield County (VA) Fire Department
- Richmond (VA) Fire Department
- Henrico County (VA) Fire Department
- APAC of Virginia
- Chaparral Steel
- W.O. Grubb Steel Erection
- Luckstone of Virginia
- Quail Ridge Construction
- Chesterfield County (VA) Department of Utilities

Contact Information

Please call to let us know what we can do to help your organization in Crane Safety You can reach us at:

Charles "Chuck" Cooke
13512 Master Stag Drive
Midlothian, VA 23112
Phone: (804) 739-1018

info@somatexinc.com



SOMATEX

SAFETY & HEALTH SERVICES

From operator training to customized workplace safety programs, Somatex offers Northern New England's #1 material handling and industrial safety team. We do more than just lead you through the regulatory compliance maze. We provide you with safety and health solutions that put you ahead.

By designing a Safety & Health program that's built around your specific training, consulting, and other needs, we help you enjoy benefits like increased material handling efficiency. Higher productivity. Better safety performance. Lower maintenance costs. And reduced costs for insurance, workers comp, liability claims, and non-compliance penalties.

For more information on our full range of Safety & Health services, ask for our free Somatex Safety & Health Division brochure. Discover the advantage of partnering with a Safety & Health provider that's truly committed to your success. Discover the Somatex difference.

EMPLOYEE TRAINING PROGRAMS

We offer a number of training courses to help your employees develop the knowledge and skills to work safely, efficiently, and productively. Courses typically include classroom time, video presentations, demonstrations, and hands-on training as applicable.

We also provide a unique series of interactive training programs on videodisc from IMC, the nation's leading producer of specialized multimedia training programs. These programs are a breakthrough training tool, and they've been used effectively by corporations including General Motors, Boise Cascade, Philadelphia Electric, and U.S. Steel. Topics in the series include Lockout/Tagout, Lift Truck Operator Safety, Hearing Conservation, and several more.

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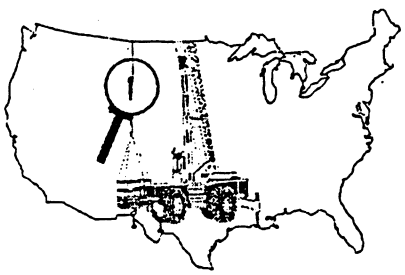
- Boom Truck Crane Operator & Rigger Training
- Lifting & Pulling Device Training
- Basic Rigging
- Advanced Rigging
- Crane Maintenance Training (Frequent Inspections)
- Personnel Lift Training
- lockout/Tagout Training (Authorized & Effected)
- Job Hazard Analisis Training
- Respiratory Training
- Fire Extinguisher Training
- Hearing Conservation Training
- Hazard Communication Training
- Train-the-Trainer Programs

|HOME| |INSTALLATIONS| |MAINTENANCE| |INSPECTIONS| |RETROFITS/UPGRADES| |CUSTOMER COMMENTS|

P.O. Box 487
Pittsfield, ME 04967-0487
info@SomatexInc.com
207-487-6141 FAX 207-487-6148



"Dedicated to the glory of God and the safety of workers."

Gary Lavender
glavender@fuse.net

Northern Central Office
National Crane Inspection, LLC.
PO Box 9186
Cincinnati, Ohio 45209
(513) 271-8608 Fax (513) 271-3439

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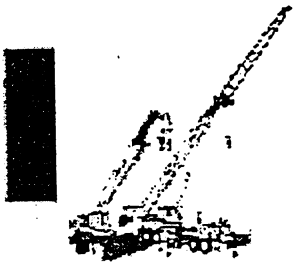


WHO WE ARE

Crane Certification EnterprisesInc.,is a nationally accredited company authorized to conduct inspections, tests, and certify cranes, derricks, hoists, and material handling devices. We are recognized by the U.S. Department of Labor, Occupational Safety and Health Administration under Title 29 Part 1919, Gear Certification. This authorizes us to inspect, test and issue certificates of approval for your material handling equipment. Our inspectors have over twenty years of experience in conducting on site Occupational Safety and Health examinations and training programs for the construction industry.

E-mail: jsimerale@cranecertification.com

WEIGHT HANDLING EQUIPMENT ACCIDENT REPORT

Report Date:

From:

To: Navy Crane Center, NORTHNAVFACENGCOM
10 Industrial Hwy; MS #82
Lester, PA 19113-2090
FAX (610) 595-0748

UIC:

Activity: | Report No:

Crane No: | Cat: | Accident Date: | Time: hrs

SPS: GPS: | Crane Type: | Crane Manufacturer:

Location: | Weather:

Crane Capacity: | Hook Capacity: | Weight of Load on Hook:

Fatality/Permanent Total Disability? YES ☐ NO ☐ | Material/Property Cost Estimate:

Loss of Work Time Beyond the Day or Shift on Which it Occured? YES ☐ NO ☐

Accident Type:

☐ Personal Injury ☐ Overload ☐ Derail ☐ Damaged Rigging Gear

☐ Load Collision ☐ Two Blocked ☐ Dropped Load ☐ Damaged Crane

☐ Crane Collision ☐ Damaged Load ☐ Other Specify _____

Cause of Accident:

☐ Improper Operation ☐ Equipment Failure ☐ Inadequate Visibility

☐ Improper Rigging ☐ Switch Alignment ☐ Inadequate Communication

☐ Track Condition ☐ Procedural Failure ☐ Other Specify _____

Chargeable to:

☐ Track Walker ☐ Rigger ☐ Operator

☐ Maintenance ☐ Management/Supervision ☐ Other Specify _____

Crane Function:

☐ Travel ☐ Hoist ☐ Rotate ☐ Luffing ☐ Lower ☐ Telescoping

Is this accident indicative of a recurring problem? ☐ Yes ☐ No

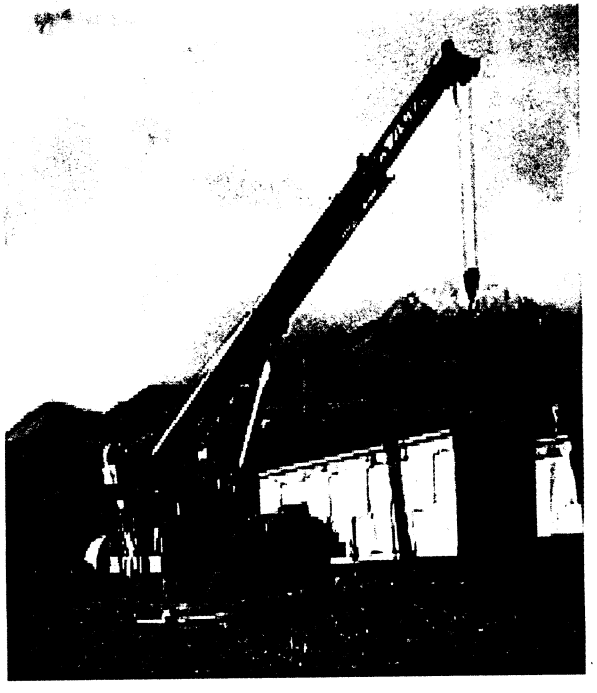
If Yes, list Accident Report Nos.: _____

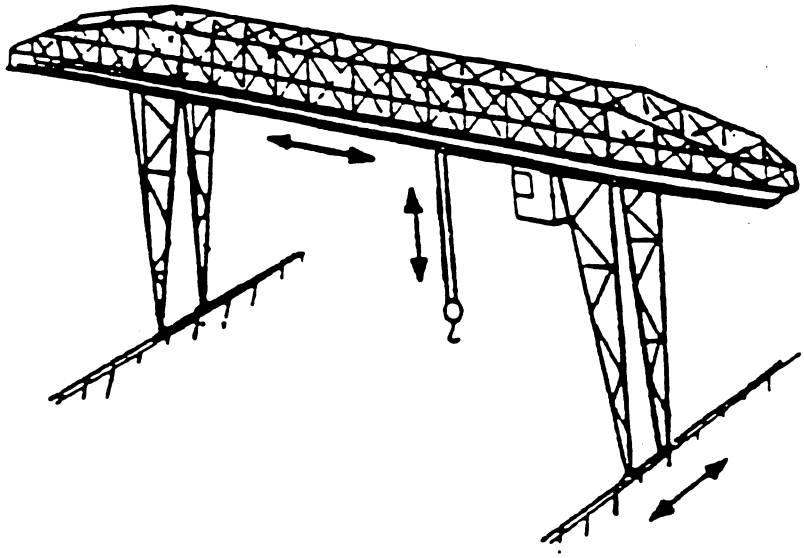
ATTACH COMPLETE AND CONCISE SITUATION DESCRIPTION AND CORRECTIVE/PREVENTIVE ACTIONS TAKEN AS ENCLOSURE (1). Include probable cause and contributing factors. Assess damages and define responsibility. For equipment malfunction or failure include specific description of the component and the resulting effect or problem caused by the malfunction or failure. List Corrective/ Preventive Actions assigned and responsible codes.

Preparer's Signature	Code	Date

CONCURRENCES (Include Signature, Code, and Date)

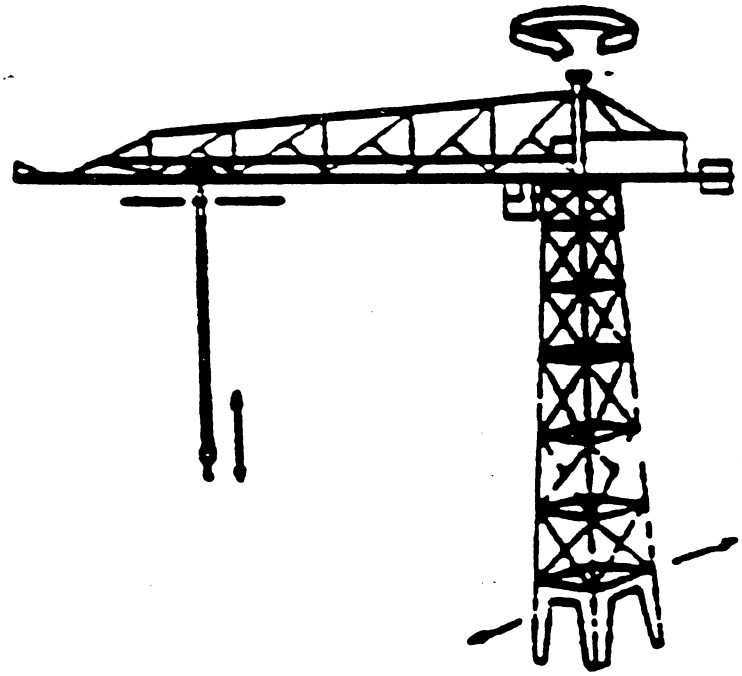
CERTIFYING OFFICIAL





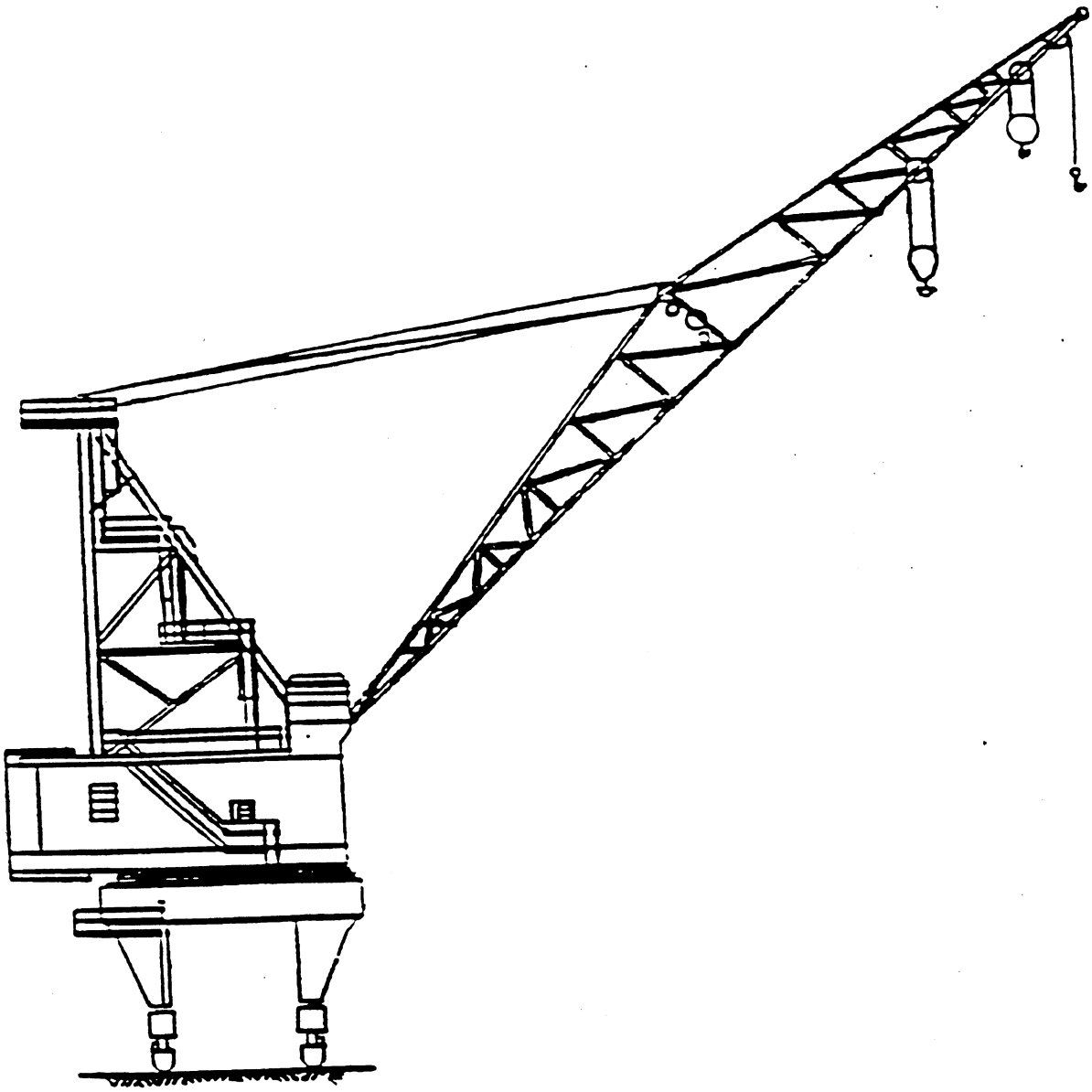
CANTILEVER GANTRY CRANE

Cantilever. A gantry crane in which the bridge gantry girders or trusses extend transversely beyond the crane runway on one or both sides.



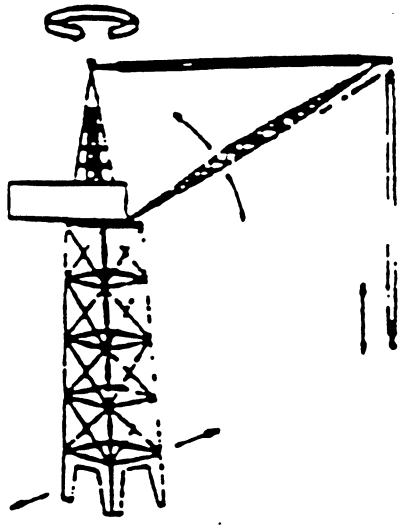
HAMMERHEAD CRANE

Hammerhead. A crane with rotating counterbalanced cantilever boom equipped with one or more trolleys and supported by a pintle or turntable on a traveling or fixed tower.



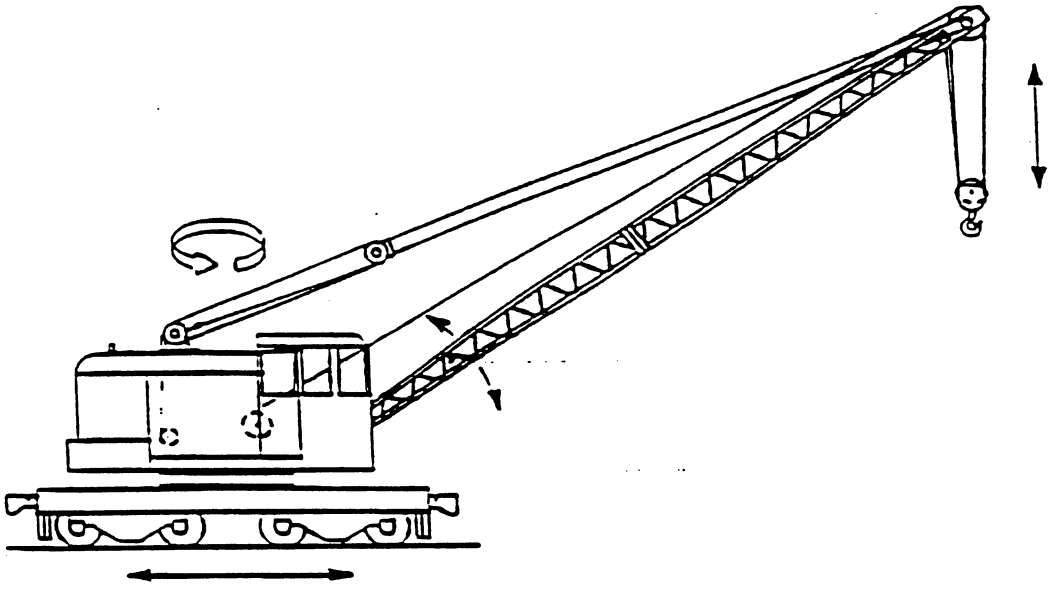
PORTAL CRANE

Portal. A crane consisting of a rotating superstructure with operating machinery and boom mounted on a gantry structure, usually with a portal opening between the gantry columns or legs for traffic to pass beneath the crane. The crane may be fixed or on a traveling base.



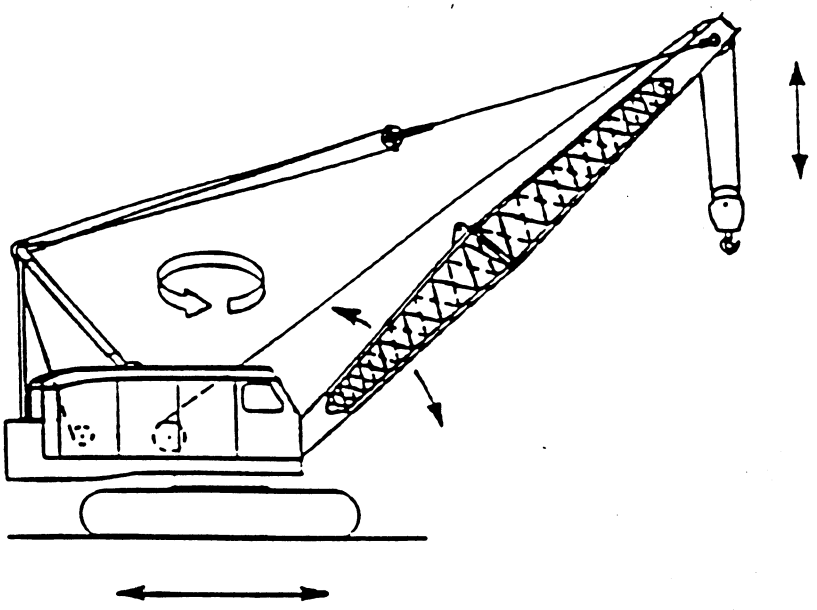
TOWER CRANE

Tower. Similar to a portal crane, but with a tower intervening between the superstructure and the gantry or other base structure; ordinarily, no portal is provided for traffic to pass beneath the crane. To resist overturning moments, the assembly may be ballasted, fixed to a foundation, or a combination of both. The crane may be fixed or on a traveling base.

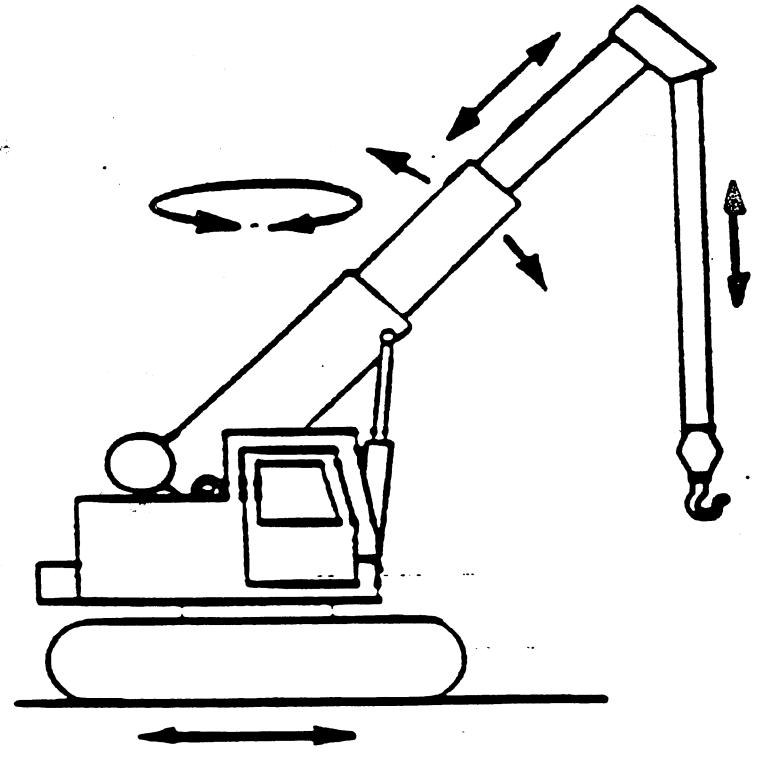


LOCOMOTIVE CRANE

Locomotive. A crane consisting of a rotating superstructure with a power plant, operating machinery, and a boom capable of being raised and lowered, all mounted on

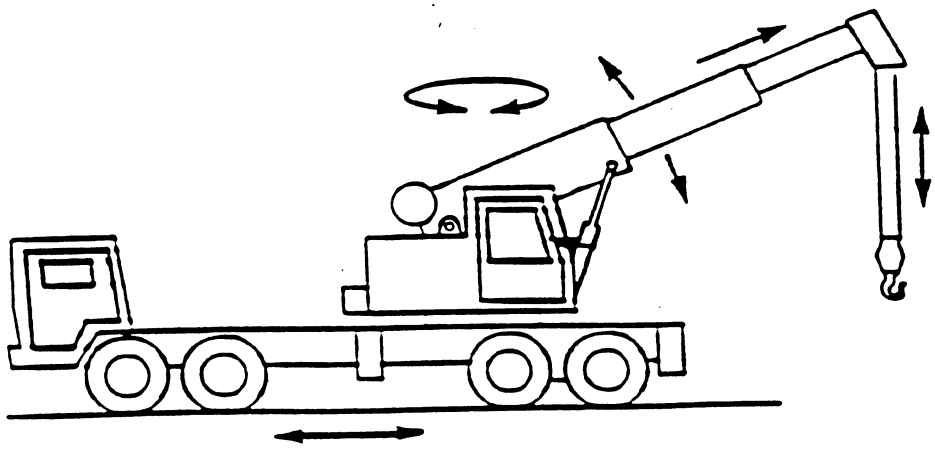


CRAWLER CRANE - FIXED BOOM

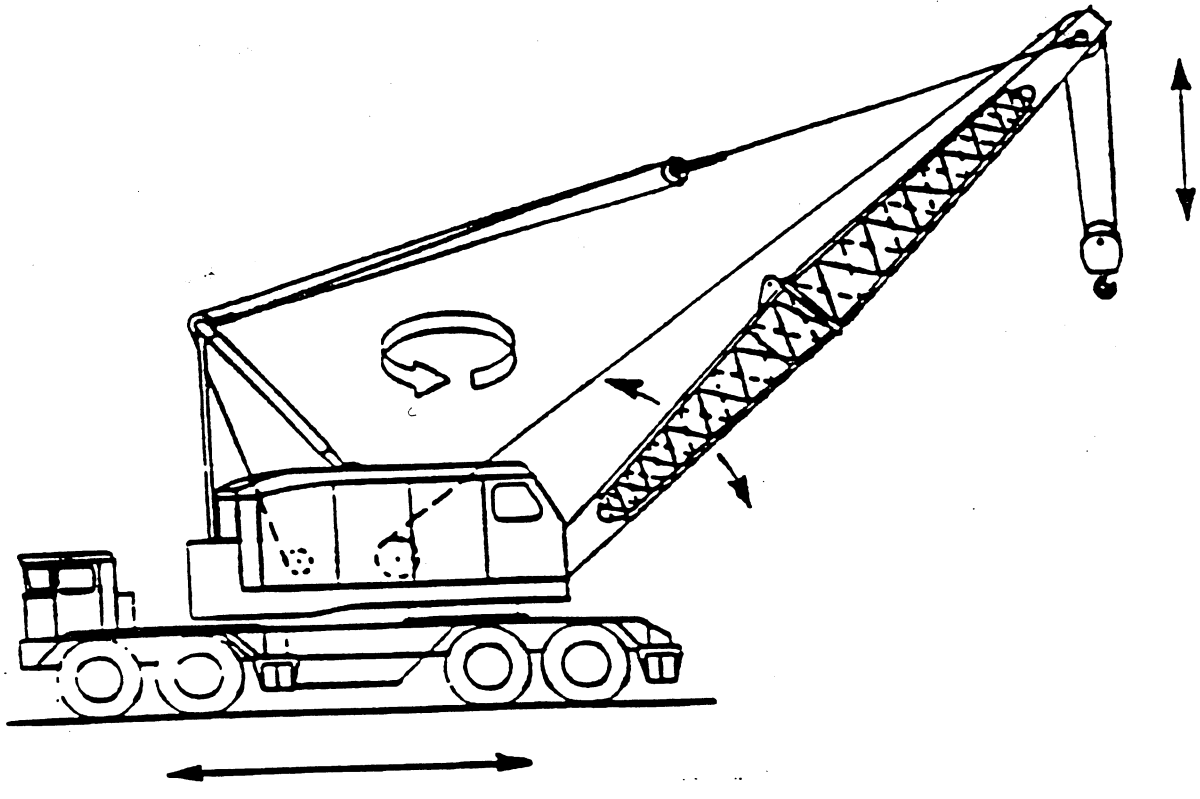


CRAWLER CRANE - TELESCOPING BOOM

Crawler. A crane consisting of a rotating superstructure with power plant, operating machinery, and a boom (either fixed or telescoping) capable of being raised and lowered, all mounted on a base equipped with crawler treads for travel.

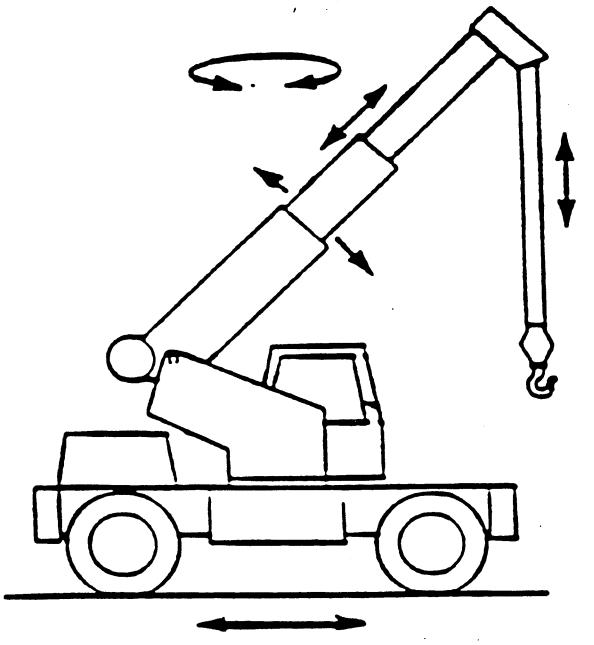


TRUCK CRANE - TELESCOPING BOOM

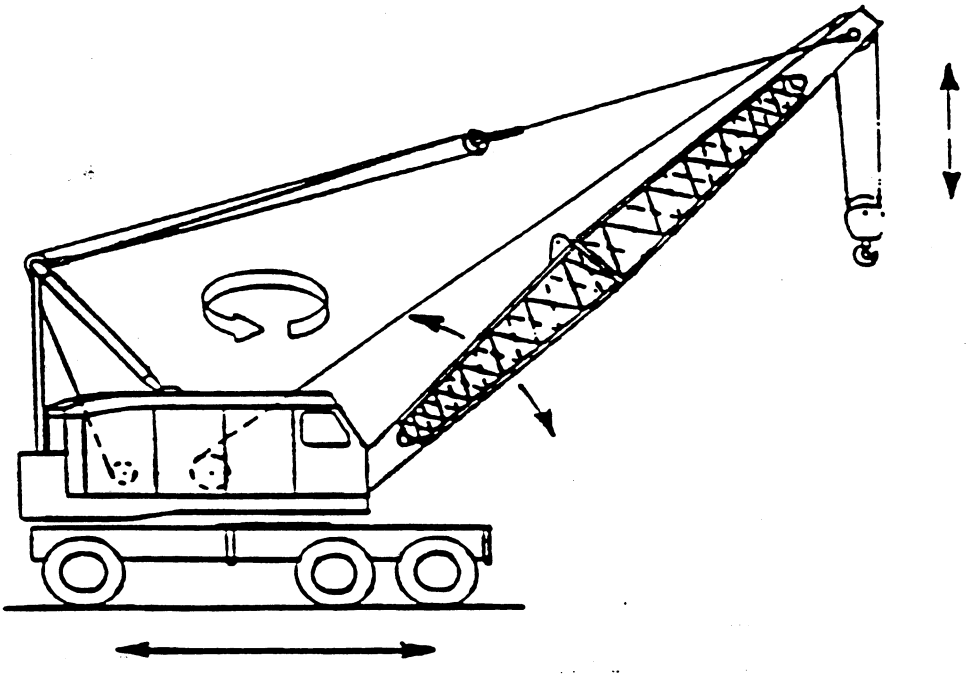


TRUCK CRANE - FIXED BOOM

Truck. A crane consisting of a rotating superstructure with power plant, operating machinery, and a boom (either fixed or telescoping) capable of being raised and lowered, all mounted on an automotive truck chassis equipped with a power plant for travel.

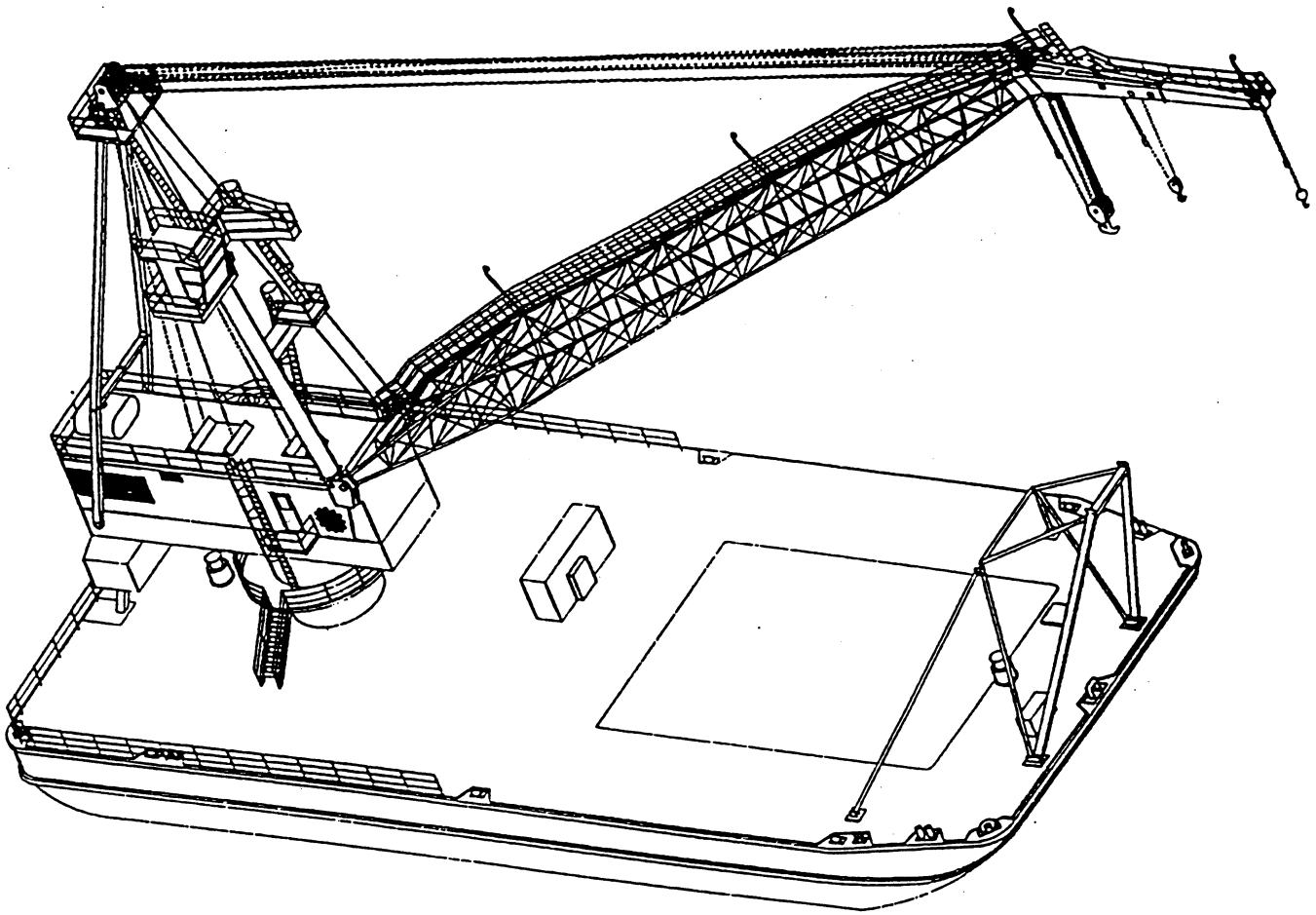


CRUISER CRANE - TELESCOPING BOOM



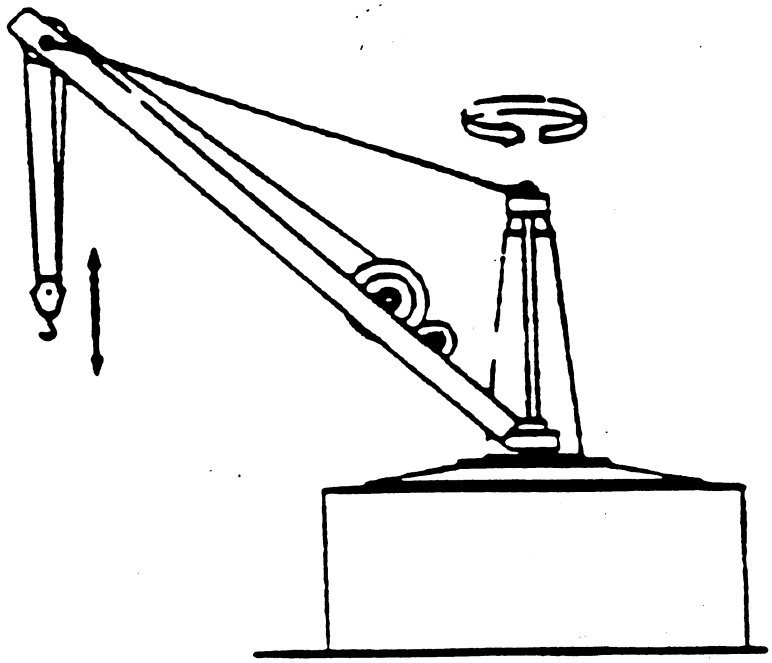
CRUISER CRANE - FIXED BOOM

Cruiser (Wagon Crane/Rough Terrain Crane). A crane consisting of a rotating superstructure with power plant, operating machinery, and a boom (either fixed or telescoping) capable of being raised and lowered, all mounted on a base or platform equipped with axles and rubber tired wheels for travel. The base is usually propelled by the engine in the superstructure, but it may be equipped with a separate engine controlled from the superstructure.



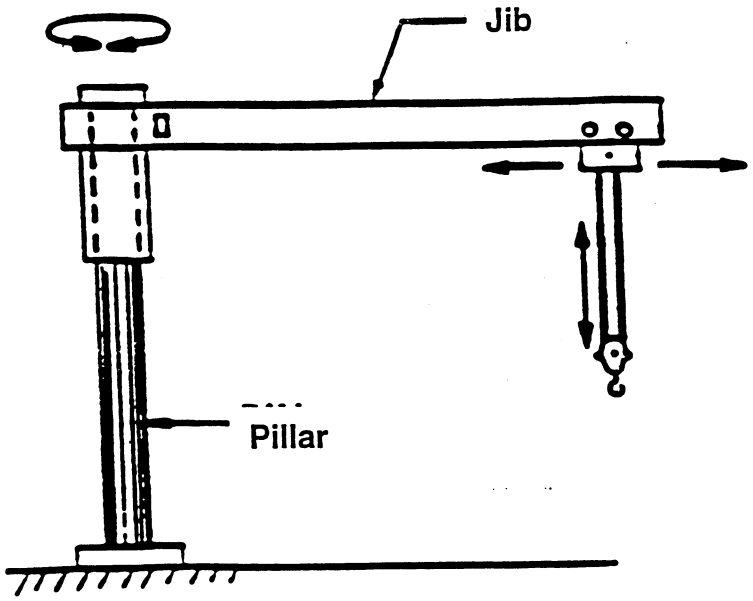
FLOATING CRANE

Floating. A crane with an integral base consisting of a pontoon, barge, or hull.



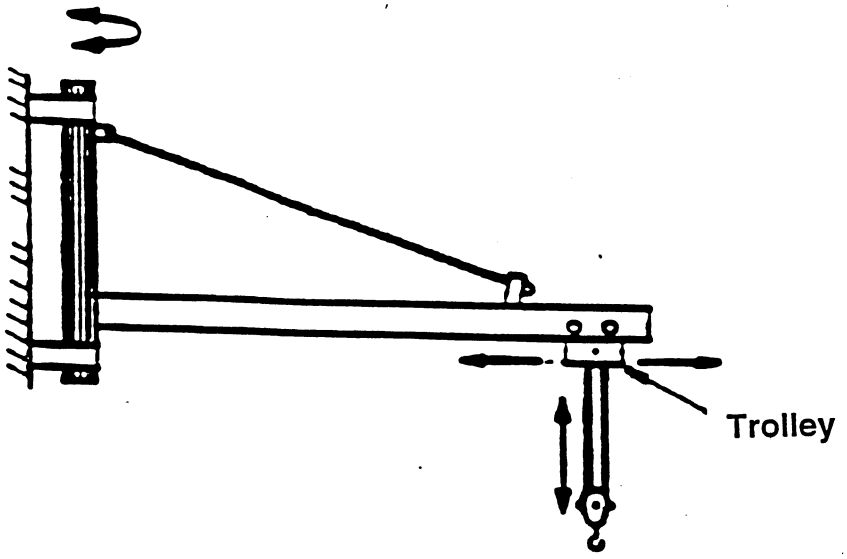
PILLAR CRANE

Pillar. A fixed crane consisting of a vertical member held in position at the base to resist overturning moment, with a constant-radius revolving boom supported at the outer end by a tension member.



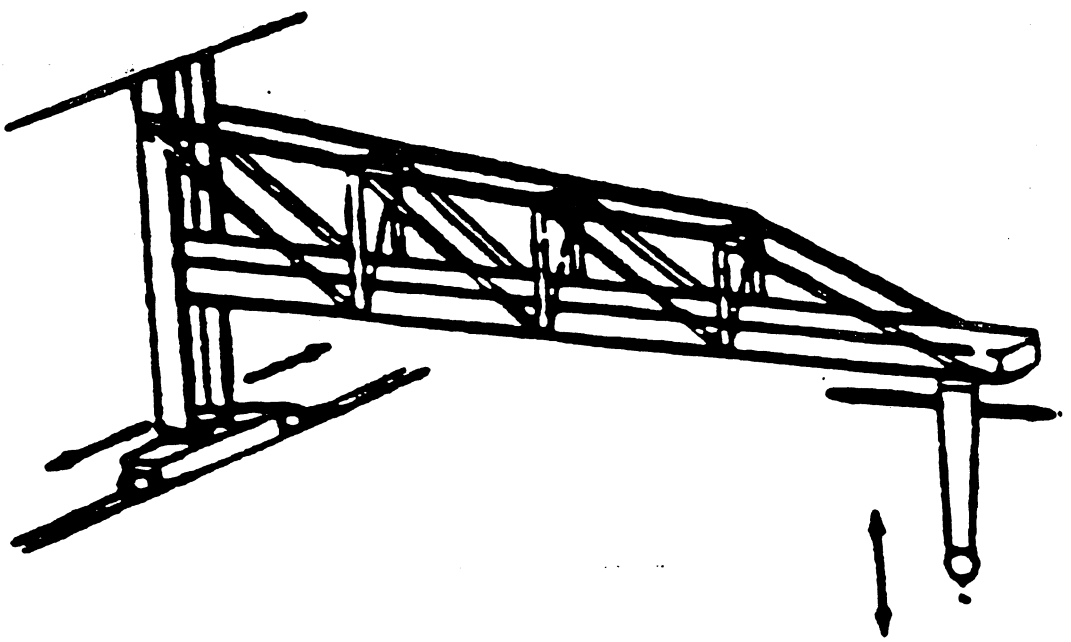
PILLAR-JIB CRANE

Pillar-Jib. A fixed crane consisting of a rotating vertical member with a horizontal arm carrying a trolley and hoist.



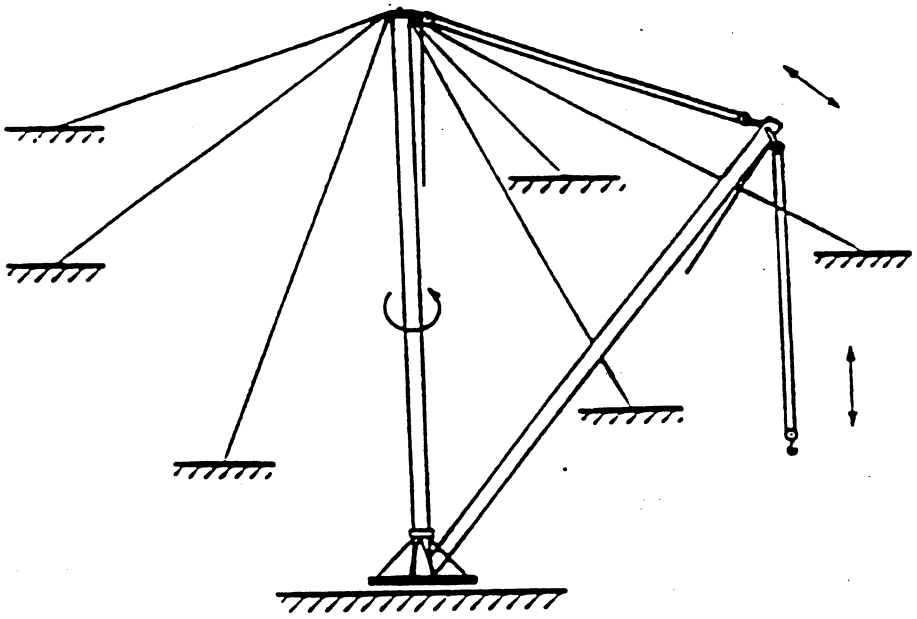
JIB CRANE (WALL MOUNTED)

Jib. A fixed crane, usually mounted on a wall or building column, consisting of a rotating horizontal boom (either cantilevered or supported by tie rods) carrying a trolley and hoist.



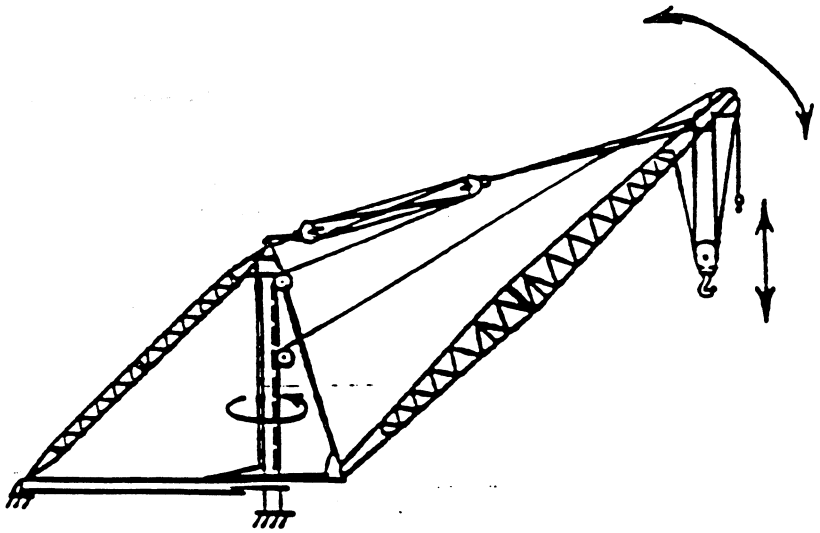
WALL CRANE

Wall. A crane with a jib and hoist, with or without a trolley, traveling on a runway attached to the sidewall or building columns.



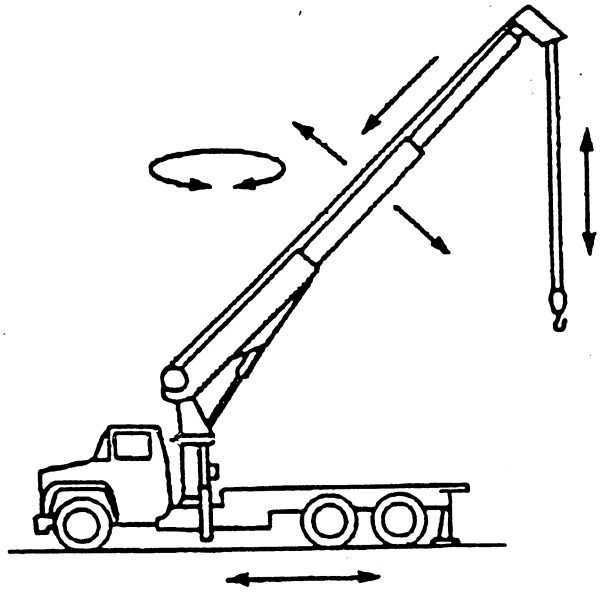
GUYED DERRICK

Guyed Derrick. A fixed derrick consisting of a mast, capable of being rotated, that is supported in a vertical position by three or more guys, and a boom with its bottom end hinged or pivoted to move in a vertical plane. Lines between the head of the mast and the head of the boom are used for raising and lowering the boom, and lines from the head of the boom are used for raising or lowering the load.

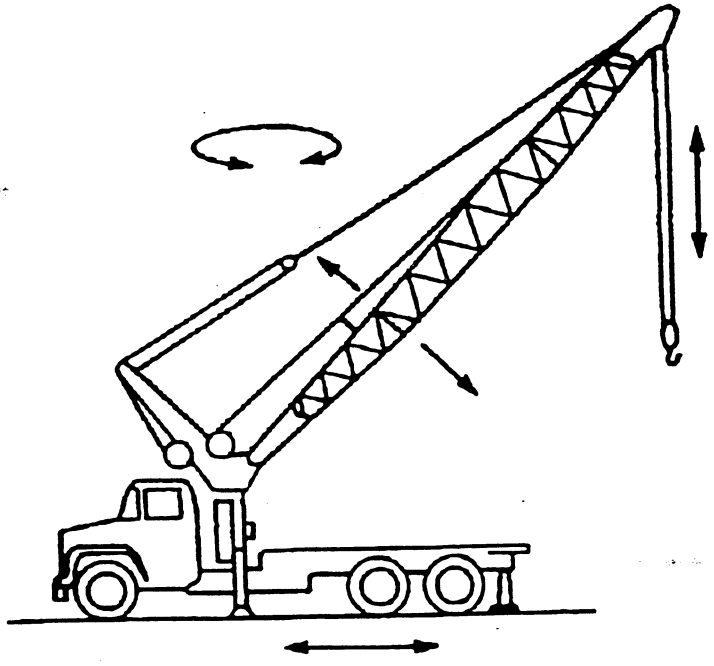


STIFF LEG DERRICK

Stiff leg Derrick. Similar to a guyed derrick except that the mast is supported or held in place by two or more stiff members capable of resisting both tensile and compressive forces. Sills are generally provided to connect the lower ends of the two stiff legs to the foot of the mast.

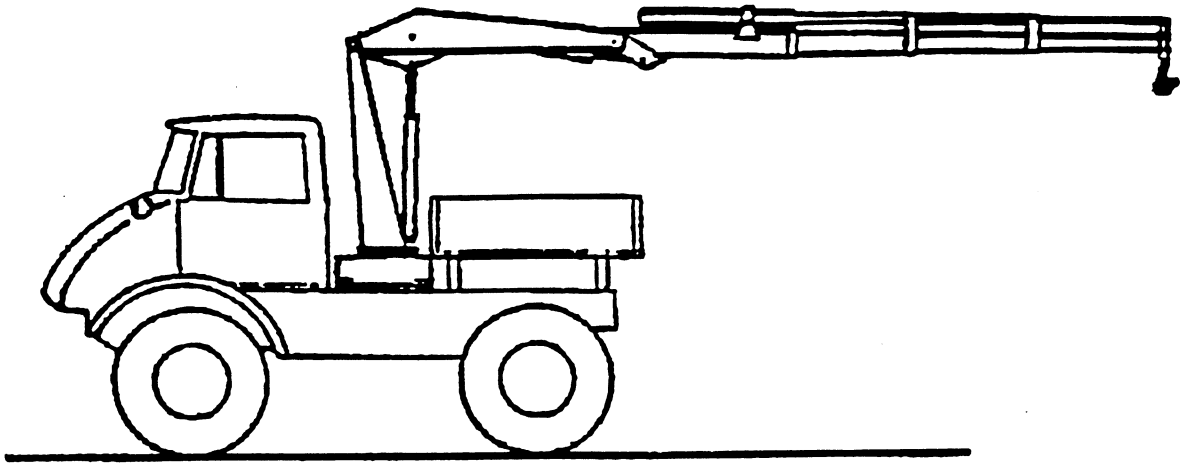


COMMERCIAL TRUCK-MOUNTED CRANE - TELESCOPING BOOM

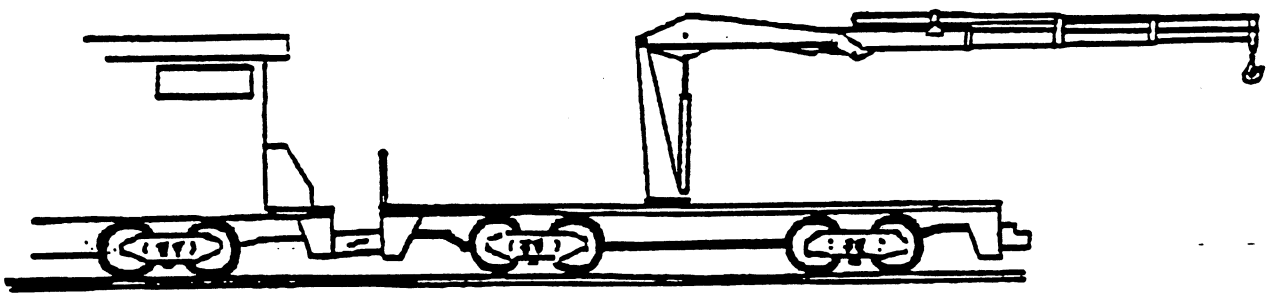


COMMERCIAL TRUCK-MOUNTED CRANE - NONTELESCOPING BOOM

Commercial Truck-mounted Crane. A crane consisting of a rotating superstructure (center post or turn-table), boom, operating machinery, and one or more operator's stations mounted on a frame attached to a commercial truck chassis, usually retaining a payload hauling capability whose power source usually powers the crane. Its function is to lift, lower, and swing loads at various radii.

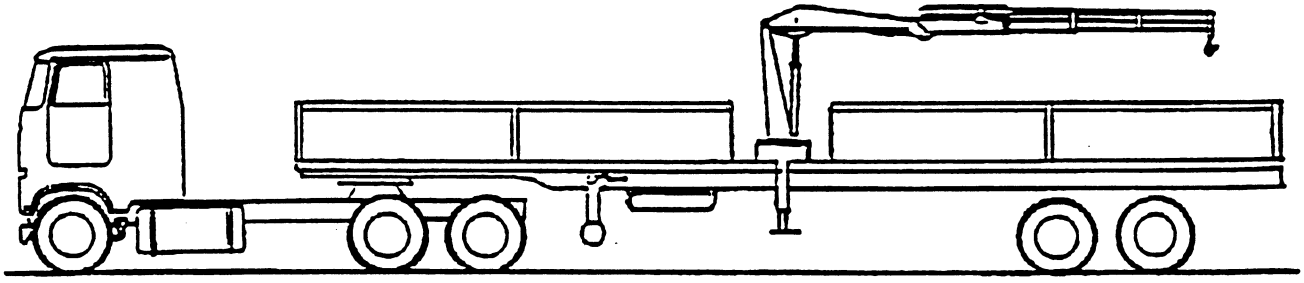


ARTICULATING BOOM CRANE - OFF-ROAD VEHICLE

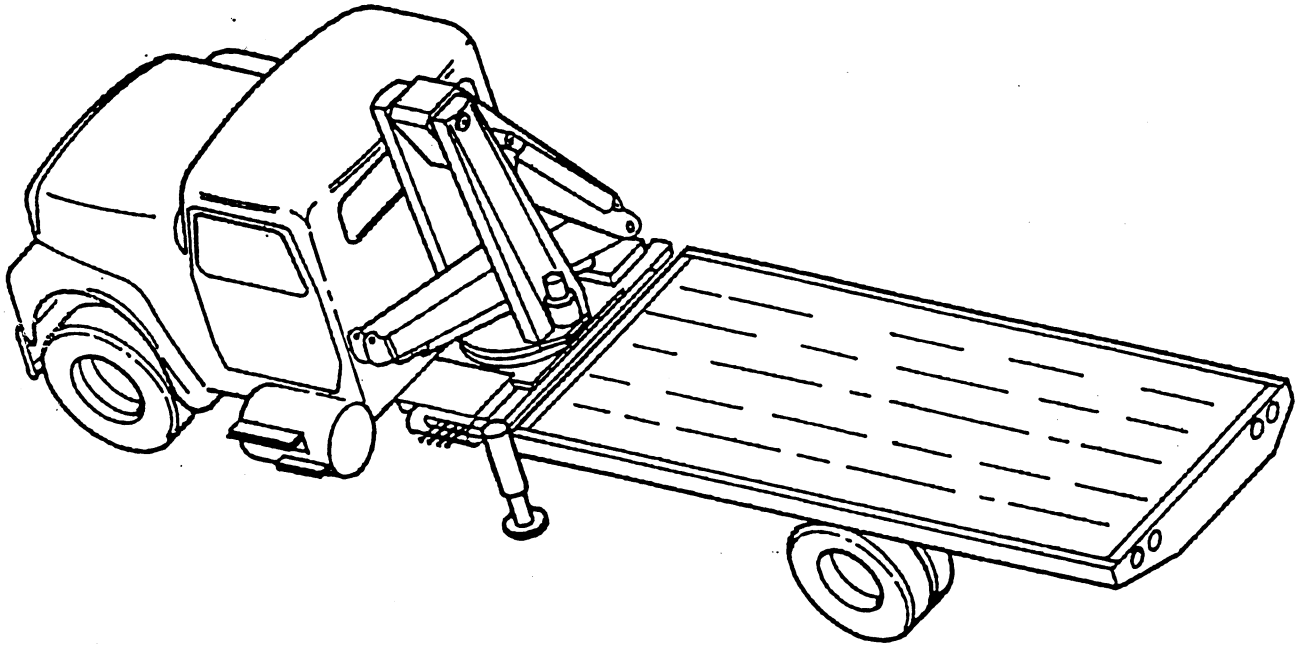


ARTICULATING BOOM CRANE - RAIL CAR INSTALLATION

Articulating Boom Crane. A crane with a boom that has sections that are articulated by hydraulic cylinders. The boom usually consists of an inner boom section, a secondary boom section, and an outer boom section, each section individually pivoting about a pivot point and individually powered by hydraulic cylinders. The boom may have a telescoping extension. The crane may be truck mounted, trailer mounted, rail car mounted, crawler-mounted, or stationary.



ARTICULATING BOOM CRANE - TRAILER MOUNTED



ARTICULATING BOOM CRANE
COMMERCIAL TRUCK-MOUNTED STANDARD GROUND CONTROL

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DEPARTMENT OF THE NAVY
NAVAL FACILITIES
ENGINEERING COMMAND
GUIDE SPECIFICATION

NFGS-01525E
30 September 1999

Superseding NFGS-01525D (09/98)

****

SECTION 01525

SAFETY REQUIREMENTS
09/99

****

NOTE: This guide specification covers construction safety requirements and requirements for the protection of Government people, property and resources. It is intended for use in construction, renovation and demolition projects in the continental U.S. and overseas. The requirements of the guide specification supplement Army Corps of Engineers manual EM-385-1-1 and clarify safety concerns for high risk construction activities. All contracts require an Accident Prevention Plan with associated Activity Hazard Analysis (and related specific plans, programs, procedures) listed on pages A-3 and A-4 per COE EM-385-1-1. Some contracts may require additional special safety plans which should be included with respective sections of the specifications. For environmental remediation contracts, an APP is required with the overall contract and a site specific Health and Safety Plan is required for each task order. Contact the EFD/EFA Safety Manager for applicability. Many states and municipalities have more stringent or additional requirements and this section should be modified as required to suit local conditions and regulations.

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NOTE: This revision "E" to NFGS-01525 revises the submittal article to comply with the agreement reached by the SPECSINTACT Tri-Agency Committee and revalidates the issue dated 30 September 1998.

****

PART 1 GENERAL

1.1 SUMMARY

1.1.1 Related Sections

a. Section 01310, "Administrative Requirements"

b. Section 01500, "Temporary Facilities and Controls"

[c. Section 13283, "Removal and Disposal of Lead-Containing Paint"]

[d. Section 13281, "Engineering Control of Asbestos Containing Materials"]

[e. Section 02220, "Site Demolition"]

[f. Section 02302, "Excavation, Backfilling, and Compacting for Utilities"]

[g. Section 02315, "Excavation and Fill"]

h. Section 03100, "Concrete Form and Accessories"

1.2 REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to in the text by the basic designation only.

AMERICAN NATIONAL STANDARDS INSTITUTE (ANSI)

ANSI A10.14	(1991) Construction and Demolition Operations - Requirements for Safety Belts, Harnesses, Lanyards and Lifelines for Construction and Demolition Use
ANSI Z359.1	(1992) Safety Requirements for Personal Fall Arrest Systems

AMERICAN SOCIETY OF MECHANICAL ENGINEERS (ASME)

ASME B30.5	(1994) Mobile Cranes
ASME B30.22	(1993) Articulating Boom Cranes

CODE OF FEDERAL REGULATIONS (CFR)

29 CFR 1910.94	Ventilation
29 CFR 1910.120	Hazardous Waste Operations and Emergency Response
29 CFR 1926.65	Hazardous Waste Operations and Emergency Response
29 CFR 1926.502(f)	Warning Line Systems

CORPS OF ENGINEERS (COE)

COE EM-385-1-1	(1996) Safety and Health Requirements Manual

NATIONAL FIRE PROTECTION ASSOCIATION (NFPA)

NFPA 10	(1995) Portable Fire Extinguishers
NFPA 70	(1999) National Electrical Code

1.3 DEFINITIONS

[a. Certified Industrial Hygienist. An industrial hygienist is an individual who is certified by the American Board of Industrial Hygiene.]

[b. Certified Safety Professional. A safety manager, safety specialist, or safety engineer that has passed the CSP exam administered by the Board of Certified Safety Professionals.]

c. Competent Person. A competent person is one who is capable of identifying existing and predictable hazards in the surroundings or working conditions which are unsanitary, hazardous, or dangerous to employees, and who has authorization to take prompt corrective measures to eliminate them.

d. Confined Space. A space which by design has limited openings for entry and exit, unfavorable natural ventilation which could contain or produce dangerous air contaminants, and which is not intended for continuous employee occupancy. Confined spaces include, but are not limited to storage tanks, process vessels, pits, silos, vats, degreasers, reaction vessels, boilers, ventilation and exhaust ducts, sewers, tunnels, underground utility vaults, and pipelines.

e. First Aid. First aid is any one-time treatment, and any follow-up visit for the purpose of observation, of minor scratches, cuts, burns, splinters, and so forth, which do not ordinarily require medical care, even though provided by a physician or registered professional personnel.

f. Health and Safety Plan (HASP). The HASP is the Navy equivalent Army term of SHP or SSHP used in COE EM-385-1-1. "USACE" property and equipment specified in COE EM-385-1-1 should be interpreted as Government property and equipment.

g. Lost Workdays. The number of days (consecutive or not) after, but not including, the day of injury or illness during which the employee would have worked but could not do so; that is, could not perform all or part of his normal assignment during all or any part of the workday or shift; because of the occupational injury or illness.

h. Medical Treatment. Medical treatment includes treatment administered by a physician or by registered professional personnel under the standing orders of a physician. Medical treatment does not include first aid treatment even through provided by a physician or registered personnel.

i. Multi-employer work site (MEWS). A multi-employer work site, as defined by OSHA, is one in which many employers occupy the same site. The Navy considers the prime contractor to be the "controlling authority" for all work site safety and health of the subcontractors.

j. Operating Envelope. There is an "operating envelope" around any crane, and inside the envelope are the operator, riggers, rigging gear between the hook and the load, the load and the crane's supporting structure (ground, rail, etc.).

k. Qualified Person. One who, by possession of a recognized degree, certificate, or professional standing, or extensive knowledge, training, and experience, has successfully demonstrated his or her ability to solve or resolve problems related to the subject matter, the work or the project.

l. Recordable Occupational Injuries or Illnesses. Any occupational injuries or illnesses which result in:

(1) Fatalities, regardless of the time between the injury and death, or the length of the illness; or

(2) Lost Workday Cases, other than fatalities, that result in lost workdays, or

(3) Non-Fatal Cases without lost workdays which result in transfer to another job or termination of employment, or require medical treatment (other than first aid) or involve: loss of consciousness or restriction of work or motion. This category also includes any diagnosed occupational illnesses which are reported to the employer but are not classified as facilities or lost workday cases.

m. Safety Officer. The superintendent or other qualified or competent person who is responsible for the on-site safety required for the project. The contractor quality control person cannot be the safety officer, even through the QC has safety inspection responsibilities as part of the QC duties.

n. Serious Accidents. Any work-related incident, which results in, a fatality, in-patient hospitalization of three or more employees, or property damage in excess of $200,000.

o. Significant Accident. Any contractor accident which involves falls of 1.2 m (4 feet) or more, electrical accidents, confined space accidents, diving accidents, equipment accidents, crane accident or fire accidents, which, result in property damage of $10,000 or more, but less than $200,000; or when fire department or emergency medical treatment (EMT) assistance is required.

p. Weight Handling Equipment (WHE) Accident. A WHE accident occurs when any one or more of the six elements in the operating envelope fails to perform correctly during operation, including operation during maintenance or testing resulting in personnel injury or death; material or equipment damage; dropped load; derailment; two-blocking; overload; and collision, including unplanned contact between the load, crane, and/or other objects. A dropped load, derailment, two-blocking, overload and collision are considered accidents even though no material damage or injury occurs. A component failure (e.g., motor burnout, gear tooth failure, bearing failure) is not considered an accident solely due to material or equipment damage unless the component failure results in damage to

other components (e.g., dropped boom, dropped load, roll over, etc.).

1.4 SUBMITTALS

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NOTE: The "G" in submittal tags following each submittal item indicates Government approval and should be retained. Add "G" in submittal tags following any added submittals that are determined to require Government approval. Submittal items not designated with a "G" will be approved by the QC organization. Item c, Health and Safety Plan is reserved for projects where hazardous material handling/removal operations are anticipated.
****

Submit the following in accordance with Section 01330, "Submittal Procedures."

SD-07 Certificates

Accident Prevention Plan (APP); G

Activity Hazard Analysis (AHA); G

Health and Safety Plan (HASP); G

SD-11 Closeout Submittals

Daily Confined Space Entry Permit. Submit one copy of each permit attached to each Daily Production Report.

Reports

Submit reports as their incidence occurs, in accordance with the requirements of the paragraph entitled, "Reports."

Crane Reports

Crane Critical Lift Plan

Certificate of Compliance

1.5 QUALITY ASSURANCE

[1.5.1 Safety Specialist

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NOTE: Specify a Safety Specialist only for very large or complex projects.
****

Provide a Safety Specialist at the work site to perform safety management, surveillance, inspections, and safety enforcement for the contractor. The Safety Specialist shall be the safety "competent person" as defined by COE EM-385-1-1. The Safety Specialist shall be at the work site at all times

whenever work or testing is being performed, shall conduct daily safety inspections and shall have no other duties other than safety management, inspections, and safety enforcement on this contract.

]1.5.2 Qualifications

a. Qualifications of Safety Officer:

(1) Ability to manage the on-site contractor safety program through appropriate management controls.

(2) Ability to identify hazards and have the capability to expend resources necessary to abate the hazards.

(3) Must have worked on similar types of projects that are equal to or exceed the scope of the project assigned with the same responsibilities.

(4) Shall, as a minimum, have attended an OSHA training qualification class including at least 10 hours of classroom instruction.

b. Qualifications of Qualified Person, Confined Space Entry. The qualified person shall be capable (by education and specialized training) of anticipating, recognizing, and evaluating employee exposure to hazardous substances or other unsafe conditions in a confined space. This person shall be capable of specifying necessary control and protective action to ensure worker safety. [Since this work involves marine operations that handle combustible or hazardous materials, this qualified person shall be a NFPA certified marine chemist.]

c. Qualification of Crane Operators. Crane operators shall meet the requirements in COE EM-385-1-1, Appendix G.

1.5.3 Meetings

1.5.3.1 Preconstruction Conference

The safety officer shall attend the preconstruction conference.

[1.5.3.2 Meeting on Work Procedures

a. Meet with Contracting Officer to discuss work procedures and safety precautions required by the APP. Ensure the participation of the contractor's superintendent, the quality control, and the CSP or CIH.

****

NOTE: Include this requirement only for projects which require a Health and Safety Plan.

****

b. Meet with Contracting Officer to discuss work procedures and safety precautions required by the HASP. Ensure the participation of the contractor's superintendent, the quality control, and the CSP or CIH.

]1.5.3.3 Weekly Safety Meetings

Hold weekly at the project site. Attach minutes showing contract title, signatures of attendees and a list of topics discussed to the QC Contractor Quality Control daily report.

1.5.3.4 Work Phase Meetings

The appropriate AHA shall be reviewed and attendance documented by the Contractor at the preparatory, initial, and follow-up phases of quality control inspection.

1.5.3.5 New Employee Indoctrination

New employees will be informed of specific site hazards before they begin work. Documentation of this orientation shall be kept on file at the project site.

1.5.4 Certifications

1.5.4.1 Accident Prevention Plan (APP)

Submit the APP at least 15 calendar days prior to start of work at the job site, following Appendix A of COE EM-385-1-1. Make the APP site specific. Notice To Proceed will be given after Government finds the APP acceptable.

1.5.4.2 Activity Hazard Analysis (AHA)

Submit the AHA for review at least 15 calendar days prior to the start of each phase. Format subsequent AHA as amendments to the APP. In accordance with contract quality control requirements each AHA will be reviewed during an on-site preparatory inspection.

[1.5.4.3 Health and Safety Plan (HASP)

Submit the HASP for projects involving the handling of hazardous materials and allow 30 calendar days for review by Naval Environmental Health Center (NEHC) for health hazard review and Naval Facilities Engineering Command, Engineering Field Division (EFD) or Engineering Field Activity (EFA) construction safety manager. The Contracting Officer will act on the HASP only after 30 day NEHC and EFD/EFA safety manager reviews.

]1.5.5 Reports

1.5.5.1 Crane Reports

Submit crane inspection reports required in accordance with COE EM-385-1-1 and as specified herein with Daily Reports of Inspections.

1.5.5.2 Crane Critical Lift Plan

Submit crane critical lift plan COE EM-385-1-1 section 16 when crane loads meet or exceed 75 percent of the crane load capacity in any configuration.

1.5.5.3 Certificate of Compliance

The Contractor shall provide a Certificate of Compliance for each crane entering a Naval activity under this contract (see ROICC for a blank certificate). Certificate shall state that the crane and rigging gear meet applicable OSHA regulations (with the contractor citing which OSHA regulations are applicable, e.g., cranes used in construction, demolition, or maintenance shall comply with 29 CFR 1926. Certify on the Certificate of Compliance that the crane operator(s) is qualified and trained in the operation of the crane to be used. [For cranes at Naval activities in foreign countries, the Contractor shall certify that the crane and rigging gear conform to the appropriate host country safety standards.] The Contractor shall also certify that all of its crane operators working on the Naval activity have been trained not to bypass safety device (e.g., anti-two block devices) during lifting operations. These certifications shall be posted on the crane.

1.6 ACCIDENT PREVENTION PLAN (APP)

Prepare the APP in accordance with the required and advisory provisions of COE EM-385-1-1 including Appendix A, "Minimum Basic Outline for Preparation of Accident Prevention Plan," and as modified herein. Include the associated AHA and other specific plans, programs and procedures listed on Pages A-3 and A-4 of COE EM-385-1-1, some of which are listed below.

1.6.1 Contents of the Accident Prevention Plan

a. Name and safety related qualifications of safety officer (including training and any certifications).

b. Qualifications of competent and of qualified persons.

c. Identity of the individual who will complete exposure data (hours worked); accident investigations, reports and logs; and immediate notification of accidents to include subcontractors.

d. Emergency response plan. Conform to COE EM-385-1-1, paragraph 01.E and include a map denoting the route to the nearest emergency care facility with emergency phone numbers. Contractor may be required to demonstrate emergency response.

e. Confined Space Entry Plan. Identify the qualified person's name and qualifications, training, and experience. Delineate the qualified person's authority to direct work stoppage in the event of hazardous conditions. Include procedure for rescue by contractor personnel and the coordination with emergency responders. (If there is no confined space work, include a statement that no confined space work exists and none will be created.)

[f. Hazardous Material Use. Provisions to deal with hazardous materials, pursuant to the Contract Clause "FAR 52.223-3, Hazardous Material Identification and Material Safety Data." And the following:

(1) Inventory of hazardous materials to be introduced to the site with estimated quantities.

(2) Plan for protecting personnel and property during the transport, storage and use of the materials.

(3) Emergency procedures for spill response and disposal, including a site map with approximate quantities on site at any given time. The site map will be attached to the inventory, showing where the hazardous substances are stored.

(4) Material Safety Data Sheets for inventoried materials not required in other section of this specification.

(5) Labeling system to identify contents on all containers on-site.

(6) Plan for communicating high health hazards to employees and adjacent occupants.]

g. Hazardous Energy Control Plan. For hazardous energy sources, comply with COE EM-385-1-1, paragraph 12.A.07.

[h. Critical Lift Plan. Weight handling critical lift plans shall be prepared and signed in accordance with COE EM-385-1-1, paragraph 16.c.18.]

i. Alcohol and Drug Abuse Plan

(1) Describe plan for random checks and testing with pre-employment screening in accordance with the DFAR Clause subpart 252.223-7004, "Drug Free Work Force."

(2) Description of the on-site prevention program

j. Fall Protection and Prevention (FP&P) Plan. The plan shall be site specific and address all fall hazards in the work place. It shall address how to protect and prevent workers from falling to lower levels when they are exposed to fall hazards above 1.8 m 6 feet. A qualified person shall prepare the plan. The plan shall include fall protection and prevention systems, equipment and methods employed, responsibilities, rescue and escape equipment and operations, training requirements, and monitoring methods. FP&P Plan shall be revised [once every six months] for lengthy projects, to reflect any new changes during the course of construction, due to changes of personnel, equipment, systems or work habits.

k. Silica Exposure Reduction. The plan shall include specific procedures to prevent employee silica inhalation exposures.

[l. Lead Abatement Plan. The safety and health aspects of lead-based paint removal, prepared in accordance with Section 13283, "Removal and Disposal of Lead Containing Paint"].

[m. Asbestos Abatement Plan. The safety and health aspects prepared in accordance with Section 13281, "Engineering Control of Asbestos Containing Materials"]

[n. Site Demolition Plan. The safety and health aspects prepared in accordance with Section 02220, "Site Demolition" and referenced sources] [Include engineering survey as applicable.]

[o. Excavation Plan. The safety and health aspects prepared in accordance with Section 02302, "Excavation, Backfilling, and Compacting for Utilities"]

p. Training Records and Requirements. List of mandatory training and certifications which are applicable to this project (e.g. explosive actuated tools, confined space entry, fall protection, crane operation, vehicle operator, forklift operators, personal protective equipment); list of requirements for periodic retraining/certification; outline requirements for supervisory and employee safety meetings.

q. Severe Weather Plan. Procedures of ceasing on-site operations during lightning or upon reaching maximum allowed wind velocities.

r. Emergency Lighting and Power Systems Plan (e.g. periodic testing of batteries for emergency lighting.)

1.7 ACTIVITY HAZARD ANALYSIS (AHA)

Prepare for each phase of the work. As a minimum, define activity being performed, sequence of work, specific hazards anticipated, control measures to eliminate or reduce each hazard to acceptable levels, training requirements for all involved, and the competent person in charge of that phase of work. For work with fall hazards, including fall hazards associated with scaffold erection and removal, identify the appropriate fall arrest systems. For work with materials handling equipment, address safeguarding measures related to materials handling equipment. For work requiring excavations, include excavation safeguarding requirements. The appropriate AHA shall be reviewed and attendance documented by the Contractor at the preparatory, initial, and follow-up phases of quality control inspection.

[1.8 HEALTH AND SAFETY PLAN (HASP)

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NOTE: Include the following for projects where work involves hazardous waste work as directed by EFD/EFA environmental personnel or safety manager. An APP is separately required to define the "construction hazards" of HAZWASTE projects.

****

Prepare as required by 29 CFR 1910.120 and COE EM-385-1-1.

1.8.1 Qualified Personnel

Retain a Certified Industrial Hygienist (CIH) or a Certified Safety Professional (CSP) to prepare the HASP, conduct activity hazard analyses, and prepare detailed plan for demolition, removal, and disposal of materials. [Retain the CIH or CSP for duration of contract.]

1.8.2 Contents

In addition to the requirements of COE EM-385-1-1, Table 28-1, the HASP must include:

a. Location, size, and details of control areas.

b. Location and details of decontamination systems.

c. Interface of trades involved in the construction.

d. Sequencing of work.

e. Disposal plan.

f. Sampling protocols.

g. Testing labs.

h. Protective equipment.

i. Pollution control.

j. Evidence of compliance with 29 CFR 1910.120 and 29 CFR 1926.65.

k. Training and certifications of CIH, CSP or other competent persons.

]1.9 DRUG PREVENTION PROGRAM

Conduct a proactive drug and alcohol use prevention program for all workers, prime and subcontractor, on the site. Ensure that no employees either use illegal drugs or consume alcohol during work hours. Ensure there are no employees under the influence of drugs or alcohol during work hours. After accidents, collect blood, urine or saliva specimens and test injured employee's influence. A copy of the test shall be made available to the Contracting Officer upon request.

1.10 FALL HAZARD PROTECTION AND PREVENTION PROGRAM

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NOTE: Use this requirement if there will be any exposure to fall hazards.

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1.10.1 Scaffolds

Delineate the fall protection requirements necessary during the erection and dismantling operation of scaffolds used on the project in the Fall Protection and Prevention (FP&P) plan and activity hazard analysis for the phase of work.

1.10.2 Training

Institute a fall protection training program. As part of the Fall Hazard Protection and Prevention Program, Contractor shall provide training for each employee who might be exposed to fall hazards.

1.11 DUTIES OF THE SAFETY OFFICER

a. Ensure construction hazards are identified and corrected.

b. Maintain applicable safety reference material on the job site.

c. Maintain a log of safety inspections performed.

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NOTE: Include the requirement below only when a preconstruction conference is specified for the project.

****

d. Attend the pre-construction conference as required.

e. Identify hazardous conditions and take corrective action. Failure to do so will result in a dismissal from the site, with a work stoppage pending approval of suitable replacement personnel.

1.12 DISPLAY OF SAFETY INFORMATION

Display the following information in clear view of the on-site construction personnel:

a. Map denoting the route to the nearest emergency care facility with emergency phone numbers.

b. AHA

c. Confined space entry permit.

[d. A sign indicating the number of hours worked since last lost workday accident.]

1.13 SITE SAFETY REFERENCE MATERIALS

Maintain safety-related references applicable to the project, including those listed in the article "References." Maintain applicable equipment manufacturers' manuals.

[1.14 HIGH HAZARD WORK AND LONG DURATION

Work under this contract is potentially hazardous. Pursuant to contract clause "FAR 52.236-13, Accident Prevention, Alternate I," submit in writing additional proposals for effecting accident prevention under hazardous conditions. Meet in conference with Contracting Officer to discuss and develop mutual understanding relative to the administration of the overall safety program.

]1.15 EMERGENCY MEDICAL TREATMENT

Contractors will arrange for their own emergency medical treatment. Government has no responsibility to provide emergency medical treatment. However, if emergency medical care is rendered by Navy medical services, charges may be billed to Contractor at prevailing rates established in BUMED Instruction 6320.4 series. Reimbursement shall be made by Contractor to

Naval Regional Medical Center Collection Agent upon receipt of monthly statement.

1.16 SITE CONDITIONS

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NOTE: Noise exposure from adjacent Government activities must be evaluated based on the exposure potential of the construction site to the Government activities. These activities may require the Contractor to provide a hearing protection program for his employees far in excess of what his work would require. If so, include the criteria so that it is part of the contract that the Contractor bids on. Add the following sentences if warranted.

****

1.16.1 Noise

The adjacent Government activities produce sound-pressure levels of [_____] dBA steady state, or [_____] dBA for [_____] minutes, or [_____]. Enforce hearing protection protecting contractor's site personnel from Government produced noise.

1.17 REPORTS

1.17.1 Accident Reports

a. For recordable occupational injuries and illnesses, the Prime Contractor shall conduct an accident investigation to establish the root cause(s) of the accident, complete the Navy Contractor Significant Incident Report (CSIR) form and provide to the Contracting Officer within 5 calendar days of the accident. The Contracting Officer will provide a copy of the CSIR form.

b. For a weight handling equipment accident the Prime Contractor shall conduct an accident investigation to establish the root cause(s) of the accident, complete the WHE Accident Report form and provide to the Contracting Officer within 30 calendar days of the accident. The Contracting Officer will provide a copy of the WHE accident report form.

1.17.2 Notification

Notify the Contracting Officer as soon as practical, but not later than four hours, of any accident meeting the definition of Recordable Occupational Injuries or Illnesses or Significant Accidents. Information shall include contractor name; contract title; type of contract; name of activity, installation or location where accident occurred; date and time of accident; names of personnel injured; extent of property damage, if any; and brief description of accident (to include type of construction equipment used, PPE used, etc.).

1.17.3 Monthly Exposure Report

Monthly exposure reporting, to the Contracting Officer is required to be attached to the monthly billing request. This report is a compilation of

employee-hours worked each month for all site workers, both prime and subcontractor.

1.17.4 OSHA Citations and Violations

Provide the Contracting Officer with a copy of each OSHA citation, OSHA report and contractor response. Correct violations and citations promptly and provide written corrective actions to the Contracting Officer.

1.17.5 Crane Notification

Notify Contracting Officer at least 15 days prior to bringing any crane equipment on-site so that the contracting officer may arrange for any additional quality assurance spot checks necessary by the government.

PART 2 PRODUCTS

[2.1 FALL PROTECTION ANCHORAGE

Fall protection anchorage, conforming to ANSI Z359.1, will be left in place and so identified for continued customer use.

]2.2 CONFINED SPACE SIGNAGE

Provide permanent signs integral to or securely attached to access covers for new permit required confined spaces. Signs wording: "DANGER--PERMIT REQUIRED CONFINED SPACE - DO NOT ENTER -" on bold letters a minimum of 25 mm one inch in height and constructed to be clearly legible with all paint removed. The signal word "DANGER" shall be red and readable from 1.52 m 5 feet.

PART 3 EXECUTION

3.1 CONSTRUCTION

Comply with COE EM-385-1-1, NFPA 241, the accident prevention plan, the activity hazard analysis and other related submittals and activity fire and safety regulations.

3.1.1 Hazardous Material Exclusions

Notwithstanding any other hazardous material used in this contract, radioactive materials or instruments capable of producing ionizing/non-ionizing radiation as well as materials which contain asbestos, mercury or polychlorinated biphenyls, di-isocynates, lead-based paint are prohibited. Exceptions to the use of any of the above excluded materials may be considered by Contracting Officer upon written request by Contractor.

3.1.2 Unforeseen Hazardous Material

The design should have identified materials such as PCB, lead paint, and friable and nonfriable asbestos. If [additional] material, not indicated, that may be hazardous to human health upon disturbance during construction operations is encountered, stop that portion of work and notify the Contracting Officer immediately. Within [14] [_____] calendar days the Government will determine if the material is hazardous. If material is not hazardous or poses no danger, the Government will direct the Contractor to

proceed without change. If material is hazardous and handling of the material is necessary to accomplish the work, the Government will issue a modification pursuant to "FAR 52.243-4, Changes" and "FAR 52.236-2, Differing Site Conditions."

3.2 PRE-OUTAGE COORDINATION MEETING

Contractors are required to apply for utility outages a minimum of 15 days in advance. As a minimum, the request should include the location of the outage, utilities being effected, duration of outage and any necessary sketches. Special requirements for electrical outage requests are contained elsewhere in this specification section. Once approved and prior to beginning work on the utility system requiring shut down, the Contractor shall attend a pre-outage coordination meeting with the ROICC and the Station Utilities Department to review the scope of work and the lock out/tag out procedures for worker protection. No work will be performed on energized electrical equipment unless proven impassable. Working equipment "hot" must be considered the last option.

3.3 PERSONNEL PROTECTION

3.3.1 Hazardous Noise

Provide hazardous noise signs, and hearing protection, wherever equipment and work procedures produce sound-pressure levels greater than 85 dBA steady state or 140 dBA impulse, regardless of the duration of the exposure.

3.3.2 Fall Protection

Enforce use of the fall protection device designated for each specific work activity in the FP&P plan and/or AHA all times when an employee is on a surface 1.8 m 6 feet or more above lower levels. Personal fall arrest systems are required when working from an articulating or extendible boom, scissor lifts, swing stages, or suspended platform. Fall protection must comply with ANSI A10.14.

3.3.2.1 Personal Fall Arrest Device

Personal fall arrest device equipment, systems, subsystems, and components shall meet ANSI Z359.1, "Safety Requirements for Personal Fall Arrest Systems". Only a full-body harness with a shock absorbing lanyard or self-retracting lanyard is an acceptable personal fall arrest device. Body belts may only be used as a positioning device system such as steel reinforcing assembly and in conjunction with another fall arrest system. Harnesses shall have a fall arrest attachment, which is a connector, affixed to the body support (usually a D-ring) and specifically designated for attachment to the rest of the system. Only double locking snap hooks and carabiners shall be used. Webbing, straps, and ropes shall be made of synthetic fiber.

3.3.2.2 Fall Protection for Roofing Work

Fall protection controls shall be implemented based on the type of roof being constructed and work being performed. The roof area to be accessed shall be evaluated for its structural integrity including weight-bearing capabilities for the projected loading.

3.3.2.2.1 Low Sloped Roofs

a. For work within 1.8 m 6 feet of an edge, on low-slope roofs, personnel shall be protected from falling by use of personal fall arrest systems, guardrails, or safety nets. Safety monitoring system is not adequate fall protection and is not authorized.

b. For work greater than 1.8 m 6 feet from an edge, warning lines shall be erected and installed in accordance with 29 CFR 1926.502(f).

3.3.2.2.2 Steep Roofs

Work on steep roofs requires personal fall arrest system, guardrails with toe-boards, or safety nets. This requirement also includes residential or housing type construction.

3.3.2.3 Safety Nets

If safety nets are used as the selected fall protection system on the project, they shall be provided at unguarded workplaces, over water, machinery, dangerous operations and leading edge work.

3.3.2.4 Existing Anchorage

Existing anchorages, used for attachment of personal fall arrest equipment, if to be used by the Contractor, shall be re-certified by the contractor's fall protection engineer (QP).

3.4 SCAFFOLDING

Employees shall be provided with a safe means of access to the work area on the scaffold. Climbing of any scaffold braces or supports not specifically designed for access is prohibited. Stair towers or ladders built into scaffold systems in accordance with USACE EM 385-1-1 Appendix J are required for work platforms greater than 20 feet in height. Contractor shall ensure that employees that are qualified perform scaffold erection. Do not use scaffold without the capability of supporting at least four times the maximum intended load or without appropriate fall protection as delineated in the accepted fall protection plan. Minimum platform size shall be based on the platform not being greater in height than three times the dimension of the smallest width dimension for rolling scaffold. Some Baker type scaffolding has been found not to meet these requirements. Stationary scaffolds must be attached to structural building components to safeguard against tipping forward or backward. Special care shall be given to ensure scaffold systems are not overloaded. Outrigger brackets used to extend scaffold platforms on self supported scaffold systems for the storage of material is prohibited. The first tie-in shall be at the height equal to 4 times the width of the smallest dimension of the scaffold base.

3.5 EQUIPMENT

3.5.1 Material Handling Equipment

a. Material handling equipment such as forklifts shall not be modified with work platform attachments for supporting employees unless

specifically delineated in the manufacturer's printed operating instructions.

b. The use of hooks on equipment for lifting of material must be in accordance with manufacturers printed instructions.

3.5.2 Weight Handling Equipment

a. Cranes must be equipped with:

(1) Load Indicating Devices (LIDs) and a Boom Angle or Radius Indicator,

(2) or Load-Moment Indicating Devices (LMIs).

(3) Anti-two-block prevention devices.

(4) Boom Hoist Hydraulic Relief Valve, Disconnect, or Shutoff (stops hoist when boom reaches a predetermined high angle).

(5) Boom Length Indicator (for telescoping booms).

(6) Device to prevent uncontrolled lowering of a telescoping hydraulic boom.

(7) Device to prevent uncontrolled retraction of a telescoping hydraulic boom.

b. The Contractor shall notify the Contracting Officer, in advance, of any cranes entering the activity so that necessary quality assurance spot checks can be coordinated.

c. The Contractor shall comply with the crane manufacturer's specifications and limitations for erection and operation of cranes and hoists used in support of the work. Erection shall be performed under the supervision of a designated person (as defined in ASME B30.5). All testing shall be performed in accordance with the manufacturers recommended procedures.

d. The Contractor shall comply with ASME B30.5 for mobile cranes, and ASME B30.22 for articulating boom cranes.

e. The presence of Naval station safety and health inspectors does not relieve the Contractor of an obligation to comply with all applicable safety regulations. The Government will investigate all complaints of unsafe or unhealthful working conditions received in writing from contractor employees, federal civilian employees, or military personnel.

f. Each load shall be rigged/attached independently to the hook/master-link in such a fashion that the load cannot slide or otherwise become detached. Christmas-tree lifting (multiple rigged materials) is not allowed.

g. When operating in the vicinity of overhead transmission lines, operators and riggers shall be alert to this special hazard and

shall follow the requirements of ASME B30.5 or ASME B30.22 as applicable.

h. Crane supported work platforms shall only be used in extreme conditions if the Contractor proves that using any other access to the work location would provide a greater hazard to the workers. Personnel shall not be lifted with a live hoist or friction crane.

i. A fire extinguisher having a minimum rating of 10BC and a minimum nominal capacity of 5lb of extinguishing agent shall be available at all operator stations or cabs of cranes. Portable fire extinguishers shall be inspected, maintained, and recharged as specified in NFPA 10, Standard for Portable Fire Extinguishers.

j. All employees shall be kept clear of loads about to be lifted and of suspended loads.

k. A weight handling equipment operator shall not leave his position at the controls while a load is suspended.

l. A Contractor Crane Operation Checklist shall be used by the CQC representative during oversight of contractor crane operations (refer to COE EM-385-1-1 Appendix H and ROICC for copies).

m. Only contractor crane operators who have met the requirements of 29 CFR 1910.94, 29 CFR 1910.120, 29 CFR 1926.65, 29 CFR 1926.502(f), COE EM-385-1-1, ASME B30.5, and ASME B30.22 and other local and state requirements shall be authorized to operate the crane.

n. Cribbing shall be utilized by the Contractor when performing lifts on outriggers.

o. The crane hook/block must be positioned directly over the load. Side loading of the crane is prohibited.

p. A physical barricade must be positioned to prevent personnel from entering the tailswing area of the crane.

q. A substantial and durable rating chart containing legible letters and figures shall be provided with each crane and securely mounted onto the crane cab in a location allowing easy reading by the operator while seated in the control station.

r. Certification records which include the date of inspection, signature of the person performing the inspection along with the serial number or other identifier of the crane which was inspected. This record will always be available for review by contracting officer personnel.

s. Written reports listing the load test procedures utilized along with any repairs or alterations performed on the crane will be available for review by the contracting officer personnel.

t. Contractor shall certify that all of the crane operators have been trained not to bypass safety devices (e.g. anti-two block devices) during lifting operations.

3.6 EXCAVATIONS

The competent person for excavation performed as a result of contract work shall be on-site when work is being performed in excavation, and shall inspect excavations prior to entry by workers. The competent person must evaluate for all hazards, including atmospheric, that may be associated with the work, and shall have the resources necessary to correct hazards promptly. Prior to digging the appropriate digging permit must be obtained. All underground utilities in the work area must be positively identified by a utility locating service and coordinated with Station Utility Departments. The Contractor must physically verify underground utility locations by hand digging using wood or fiberglass handled tools when any adjacent construction work is expected to come within three feet of the underground system. If construction is parallel to an existing utility the utility shall be exposed by hand digging every 30 m (100 feet) if parallel within 1500 m 5 feet of the excavation. Trench and shoring systems must be identified in the accepted safety plan and activity hazard analysis. Extreme care must be used when excavating near direct burial electric underground cables. Trenching machines with digging chain drives shall be operated only when the spotters/laborers are in plain view of the operator. Operator and spotters/laborers shall be provided training on the hazards of the digging chain drives with emphasis on the distance that needs to be maintained when the digging chain is operating. Documentation of the training shall be kept on file in the project site office or trailer.

3.7 ELECTRICAL

3.7.1 Conduct of Electrical Work

Underground electrical spaces must be certified safe for entry before entering to conduct work. Cable intended to be cut must be positively identified and de-energized prior to performing each cut. Positive cable identification must be made prior to submitting any outage request for electrical systems. Arrangements are to be coordinated with the Contracting Officer and Station Utilities for identification. The Contracting Officer will not accept an outage request until the Contractor satisfactorily documents that the circuits have been clearly identified.Perform all high voltage cutting remotely. When racking in or live switching of circuit breakers, no additional person other than the switch operator will be allowed in the space during the actual operation. Plan so that work near energized parts is minimized to the fullest extent possible. Use of electrical outages clear of any energized electrical sources is the preferred method. When working in energized substations, only qualified electrical workers shall be permitted to enter. When work requires Contractor to work near energized circuits as defined by the NFPA 70, high voltage personnel must use personal protective equipment that includes, as a minimum, electrical hard hat, safety shoes, insulating gloves with leather protective sleeves, fire retarding shirts, coveralls, face shields, and safety glasses. Insulating blankets, hearing protection, and switching suits may be required, depending on the specific job and as delineated in the Contractor AHA.

3.7.2 Portable Extension Cords

Portable extension cords shall be sized in accordance with manufacturer ratings for the tool to be powered.

3.8 WORK IN CONFINED SPACES

Comply with the requirements in Section 06.I of COE EM-385-1-1. Any potential for a hazard in the confined space requires a permit system to be used.

a. Entry Procedures. Prohibit entry into a confined space by personnel for any purpose, including hot work, until the qualified person has conducted appropriate tests to ensure the confined or enclosed space is safe for the work intended and that all potential hazards are controlled or eliminated and documented. (See Section 06.I.05 of COE EM-385-1-1 for entry procedures.) All hazards pertaining to the space shall be reviewed with each employee during review of the AHA.

b. Forced air ventilation is required for all confined space entry operations and the minimum air exchange requirements must be maintained.

c. Ensure the use of rescue and retrieval devices in confined spaces greater than 1.5 m 5 feet in depth. Conform to Sections 06.I.09, 06.I.10 and 06.I.11 of COE EM-385-1-1.

d. Sewer wet wells require continuous atmosphere monitoring with audible alarm for toxic gas detection.

e. Include training information for employees who will be involved as entrant attendants for the work. Conform to Section 06.I.06 of COE EM-385-1-1.

f. Entry Permit. Use ENGFORM 5044-R or other form with the same minimum information for the Daily Confined Space Entry Permit, completed by the qualified person. Post the permit in a conspicuous place close to the confined space entrance.

3.9 CRYSTALLINE SILICA

Grinding, abrasive blasting, and foundry operations of construction materials containing crystalline silica, shall comply with OSHA regulations, such as 29 CFR 1910.94, and COE EM-385-1-1, (Appendix C). The Contractor shall develop and implement effective exposure control and elimination procedures to include dust control systems, engineering controls, and establishment of work area boundaries, as well as medical surveillance, training, air monitoring, and personal protective equipment.

3.10 HOUSEKEEPING

3.10.1 Clean-up

All debris in work areas shall be cleaned up daily or more frequently as necessary. Construction debris may be temporarily located in an approved location, however garbage accumulation must be removed each day.

3.10.2 Dust Control

In addition to the dust control measures required elsewhere in the contract documents dry cutting of brick or masonry shall be prohibited. Wet cutting must address control of water run off.

3.11 ACCIDENT SCENE PRESERVATION

For serious accidents, and accidents involving weight handling equipment, ensure the accident site is secured and evidence is protected remaining undisturbed until released by the Contracting Officer.

3.12 FIELD QUALITY CONTROL

3.12.1 Inspections

Include safety inspection as a part of the daily Quality Control inspections required in Section 01450, "Quality Control".

3.13 FLAMMABLE AND COMBUSTIBLE LIQUID HANDLING AND STORAGE

3.13.1 Safety Gas Containers

Handling of flammable and combustible liquids shall be in safety containers with flame arresters, with not more than 5 gallons capacity, having a spring-closing lid and spout cover and designed to safely relieve internal pressures under fire exposures. Flammable and combustible Liquids shall be stored in separate NFPA approved storage cabinets 50 feet away from any sources of ignition with suitable NO SMOKING OR OPEN FLAME signs posted in all such areas.

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NOTE: Suggestions for improvement of this specification will be welcomed using the Navy "Change Request Forms" subdirectory located in SPECSINTACT in Jobs or Masters under "Forms/Documents" directory or DD Form 1426. Suggestions should be forwarded to:

Officer In Charge
Seabee Logistics Center
NAVFAC 15G/SLC 15E
4111 San Pedro Street
Port Hueneme, CA 93043-4410

FAX: (805) 985-6465/982-5196 or DSN 551-5196

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Crane Flow Chart

EXISTING STEP

NEW STEP

Crane

Station entry

Work on Piers?

NO

YES

Contractor Notifies ROICC & provides certificate of compliance form

ROICC returns certificate signed acknowledging receipt to contractor

Submit Waterfront Operational Permit

PWC review

Accepted

Preparatory inspection with review of Activity Hazard Analysis

Crane arrives at site

"Periodic"/Initial inspection completed by contractor and provided to ROICC; EM 385 Appendix H

ROICC completes QA checklist

Follow up inspections with EM 385 appendix H daily "start up" checklist completed by KTR